TRITON R

User Guide

Version 1.0

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Contents

1 Introduction 5
2 Package Contents 6
3 Product Description 7
Sensors 8
Buttons and LEDs 9
Technical specifications 11
Industry approvals and certifications 12
4 Configuration 13
Downloading the Software 13
Installing the Software 13
Installing the Update 17
Installing the cable driver 19
Connecting and disconnecting the unit parts 20
Inserting the SIM card 21
Connecting the unit to the computer 24
Configuring the unit 25
Network settings 31
Transmission Rates settings 33
Hardware settings 35
Saving the configuration 37
Configuring a new unit with the saved configuration 37
5 Testing 38
TCP test 38
GPS test 39
Unit Status 40
6 Installation 41
7 Monitoring 44
Home 45

Resources 46
Units 46
Groups 49
Users 50
Perimeters 53
Plans 56
Monitor 62
Map 65
Reports 70
Scheduled reports 72
Profile 75
Help 77
Appendix A – Unit Communication in Starcom Systems 78
Appendix B – Contacts 80

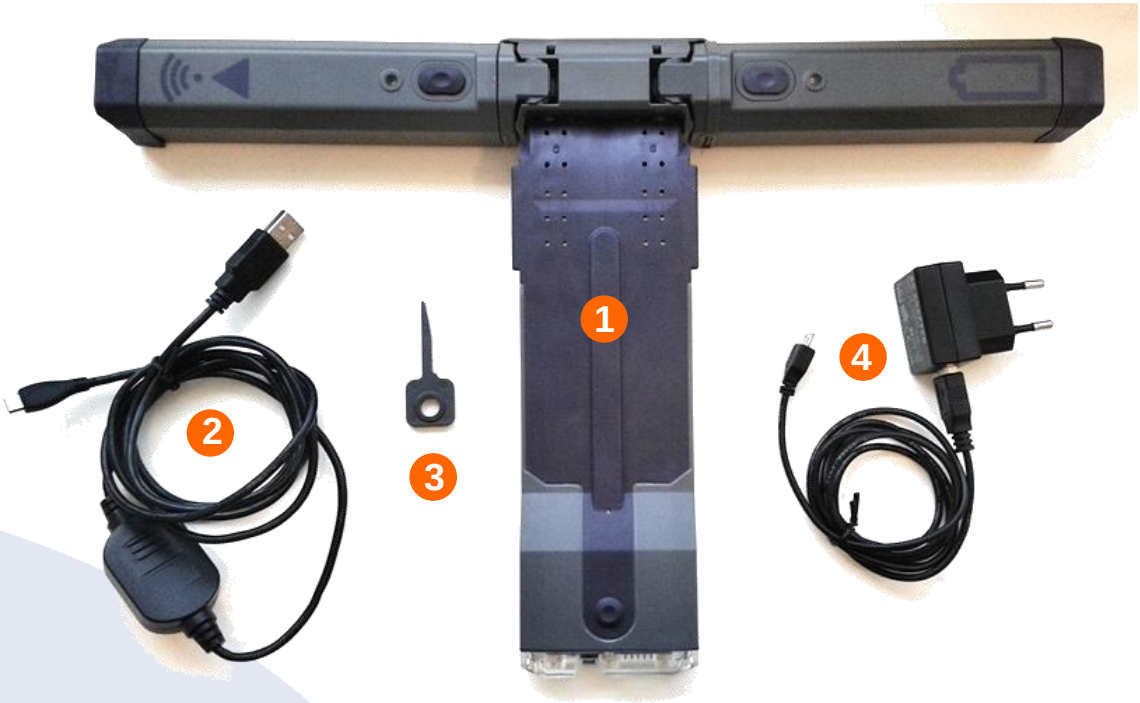
1 Introduction

Triton R is a sophisticated real-time container tracking device designed for monitoring and management purposes. It allows full control of various events and situations by automatic remote tracking, provides system stability and continuity of operations.

Utilizing its built in sensors, GPS location tracking and GPRS facilities for message communication the system can detect when the container has reached the customer and inform the recipient of every movement of the container. Any damage, blow or breaking into the container can be reported by email and SMS.

The device is easily installed on the container door frame and performs the monitoring of the container state and location. The system provides alerts on various events, such as door opening, breaking in through the side wall, door forcing, container tilt, fall, impact, etc.

2 Package Contents



1. Triton R unit
2. Triton R USB programming cable
3. Unit key
4. AC charger

WARNING: Use only the charger provided by Starcom Systems to charge the Triton R battery. Using any other charger could damage your device or battery.

3 Product Description

1. **Tail** – part of Triton R which registers the container condition information received from the sensors. This part contains a light sensor, humidity and temperature sensor, accelerometer, and a ZigBee module, which can be used to connect external sensors. The Door button is located here. This part contains the magnets for fast attachment to the container door frame. When Triton R is installed in the container, the sensor part of the Tail is located inside the container.

2. **Main** – main part which contains the CPU, GSM and GPS modules and antennas, SIM card slot, and battery. This part contains a Micro-USB socket used for charging and connecting the unit to the computer. The Operation (On/Off) button is located here. When Triton R is installed in the container, this part is located outside the container.

3. **Battery** – additional unit battery. When Triton R is installed in the container, this part is located outside the container.

Sensors

Triton R incorporates several sensors to monitor and report various event types. Triton R also allows to connect external sensors of the same version as its internal sensors.

- **Light sensor** – detects a change of light inside the container (e.g. breaking into the container).

- **Acceleration sensor** – detects impacts to the container.

- **Humidity and temperature sensor** – detects temperature and humidity around the unit (can be configured for high and low temperature alerts from -127°C to +127°C and high and low humidity alerts).

Buttons and LEDs

1. **Door button** – button which responds when the container door is open/closed.

2. **Operation button** – button which serves for testing the Triton R operation. When the Main part is disconnected from the Tail, this button serves as On/Off button.

3. **LED indicators** – the LED indicators located on the Main part and the Battery part will light up when the unit is charging or operating.

   To turn the Main on, press and hold the Operation button. The LED will flash 5 times with a white light and then turn **green** (if the battery is fully charged), or **red** (if the battery is used). When continuing to press the Operation button over 3 seconds, the LED will turn white and start sending a "Button On" message.

After this the LED will blink **green** until the unit successfully sends a message (or 5 minutes have passed). The LED will blink **red** until the unit successfully finds the GPS position (or 5 minutes have passed).

To turn the Main off, use the key and disconnect it from the Tail. Then press and hold the Operation button until the light turns white and then turns off.

When the Door button is pressed on the Tail (Door closed), the LED on the Main will emit 2 **blue** blinks. When the Door button is unpressed (Door open), the LED will emit 3 **blue** blinks.

While the unit is charging the **red** LED will light up, when fully charged the **green** LED will light up.

To check the battery status on the Main part, or on the Battery part, press the Operation button and hold it for a second. If the LED turns **green**, the battery is fully charged. If the LED turns **red**, the battery is used and needs charging.

Technical specifications

Supply	Voltage	3.7 V
Operating Humidity		Up to 90%
Measurements		40 x 25 x 4 cm (15.7 x 9.8 x 1.6 inch), 621 gr (21.9 oz)
Cellular Communication	GSM/GPRS (default) Optional Modems Antenna type Data channels Protocol	Quad Band (850, 900, 1800, 1900) UMTS/HSPA+, CDMA/1xRTT/EV-DO, LTE Built-in (concealed) SMS & TCP/IP Propriety – encrypted
Location	Type Time to First Fix (TTFF) Positioning Accuracy Antenna Type	GPS, GLONASS (optional) 2 sec (hot start) 10m CEP (50%) Velocity: 0.2m/s (50%) Built in (concealed)
CPU Capacity	Static RAM Nonvolatile Memory Flash Memory	128 Kb 34 Kb 2048 Kb
Sensors		
Temperature	Range Accuracy	-45°C to +125°C ± 0.2°C
Humidity	Range Accuracy	0% RH to 100% RH ± 1.8 % RH
Accelerometer	Scale Accuracy	± 8g ± 2.5%
Light	Resolution Sensitivity	0.025 LUX 0 - 104,448 LUX (Sunlight)

Inputs	Push-button Door Switch	1 1
Battery Pack	Type Capacity	Li-Ion 5200 mAh
Power Consumption	Sleep/Idle GPS only GPRS only GPS and GPRS	0.05 mAh 75 mAh 100 mAh 165 mAh
Access Port	Type	TTL

Industry approvals and certifications

For available certificates, see:
http://wiki.starcomsystems.com/wiki/index.php/Marketing#Certifications.

4 Configuration

Downloading the Software

Please download the INSTALLER application. Please contact the technical support department for details.

Installing the Software

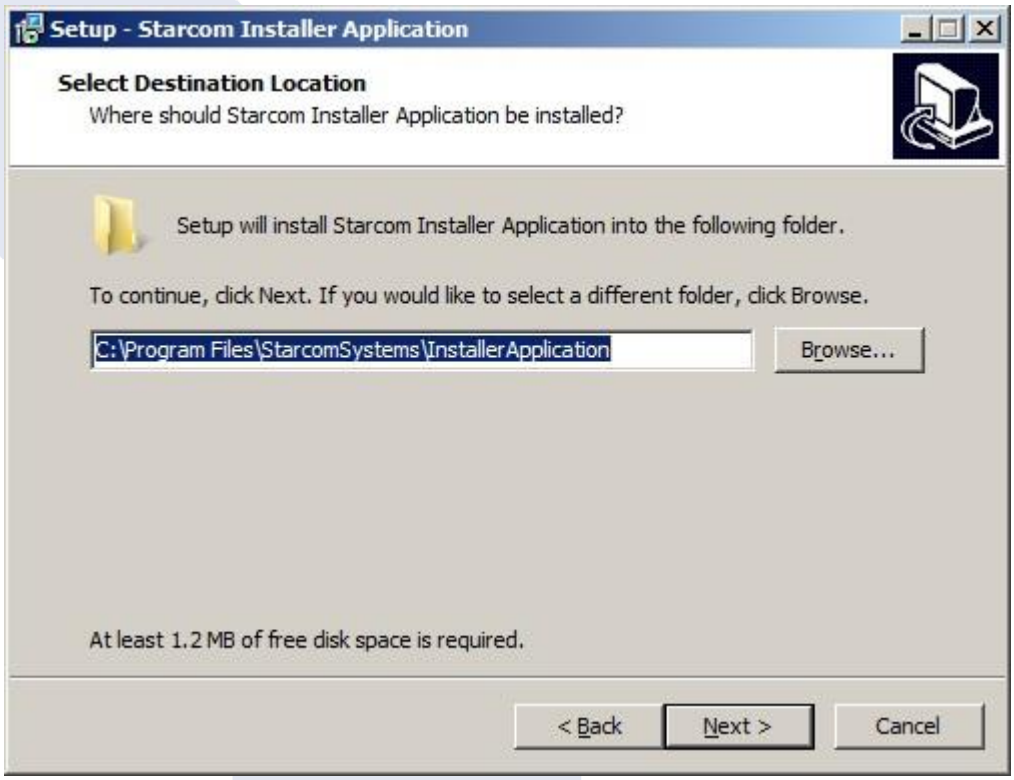
Locate the folder where you saved the installer setup file. Double-click the **InstallSetup.exe**. The Open File dialog box appears.

Open File - Security Warning
The publisher could not be verified. Are you sure you want to run this software?
Name: C:\Users\user\Downloads\InstallSetup.exe
Publisher: Unknown Publisher
Type: Application
From: C:\Users\user\Downloads\InstallSetup.exe
Run
Cancel
Always ask before opening this file
This file does not have a valid digital signature that verifies its publisher. You should only run software from publishers you trust.
How can I decide what software to run?

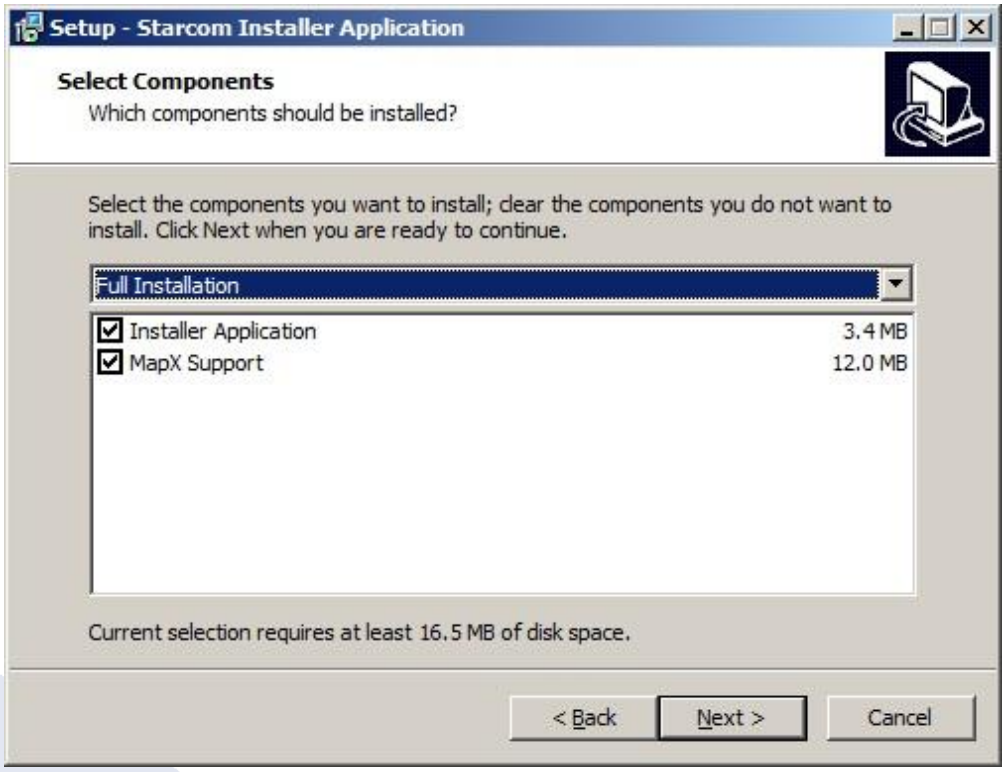
Click **Run**. A Windows Security dialog box appears. Click **Yes**. The Welcome to the Starcom Installer Application Setup Wizard window appears.

Setup - Starcom Installer Application
Welcome to the Starcom Installer Application Setup Wizard
This will install Installer Application on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

Click **Next**. The Select Destination Location window appears.


Setup - Starcom Installer Application
Select Destination Location
Where should Starcom Installer Application be installed?
Setup will install Starcom Installer Application into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\StarcomSystems\InstallerApplication
Browse...
At least 1.2 MB of free disk space is required.
< Back
Next >
Cancel

Click **Next**. The Select Components window appears.

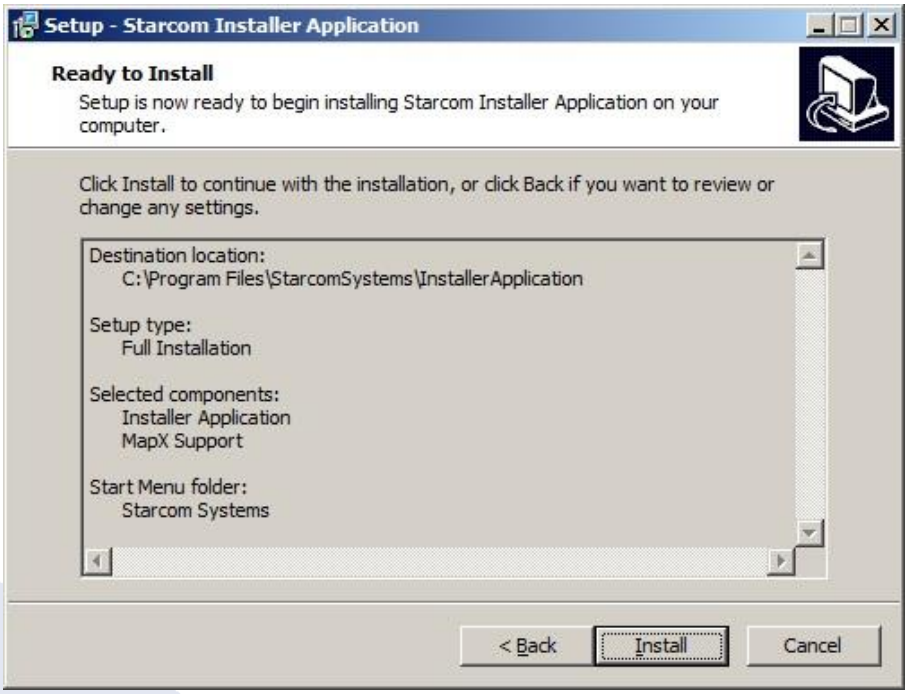

Setup - Starcom Installer Application
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Full Installation
Installer Application 3.4 MB
MapX Support 12.0 MB
Current selection requires at least 16.5 MB of disk space.
< Back
Next >
Cancel

Click **Next**. The Select Start Menu Folder window appears.

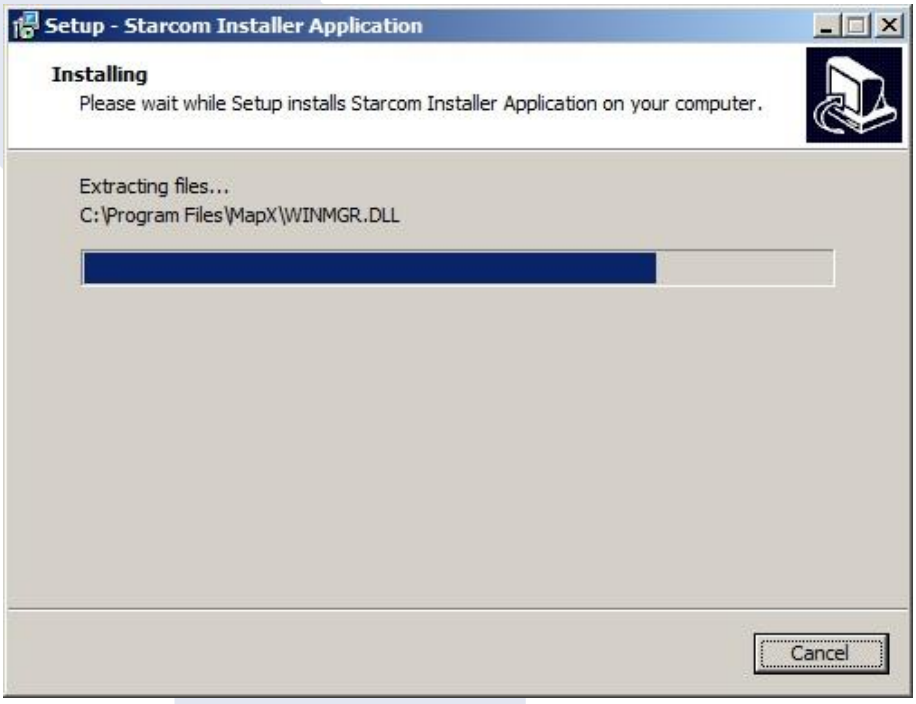
Setup - Starcom Installer Application
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
Starcom Systems
Browse...
Don't create a Start Menu folder
< Back
Next >
Cancel

NOTE: Select **Don't create a Start Menu folder** checkbox, if you do not want to create a start menu folder.

Click **Next**. The Ready to Install window appears.



Click **Install**. The installation starts and a progress bar appears in the window, indicating the progress of the installation.



When the installation is complete, the Completing the Starcom Installer Application Setup Wizard window appears.

Setup - Starcom Installer Application
Completing the Starcom Installer Application Setup Wizard
Setup has finished installing Starcom Installer Application on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
Finish

Click **Finish**.

Installing the Update

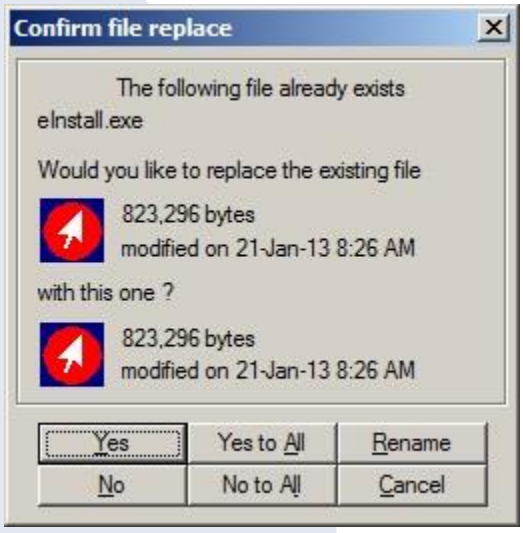
To install the Installer update software, locate the folder where you saved the update file. Double-click **IUpdate.exe**. The Open File dialog box appears.

Open File - Security Warning
The publisher could not be verified. Are you sure you want to run this software?
Name: C:\Users\user\Downloads\IUpdate.exe
Publisher: Unknown Publisher
Type: Application
From: C:\Users\user\Downloads\IUpdate.exe
Run
Cancel
Always ask before opening this file
This file does not have a valid digital signature that verifies its publisher. You should only run software from publishers you trust.
How can I decide what software to run?

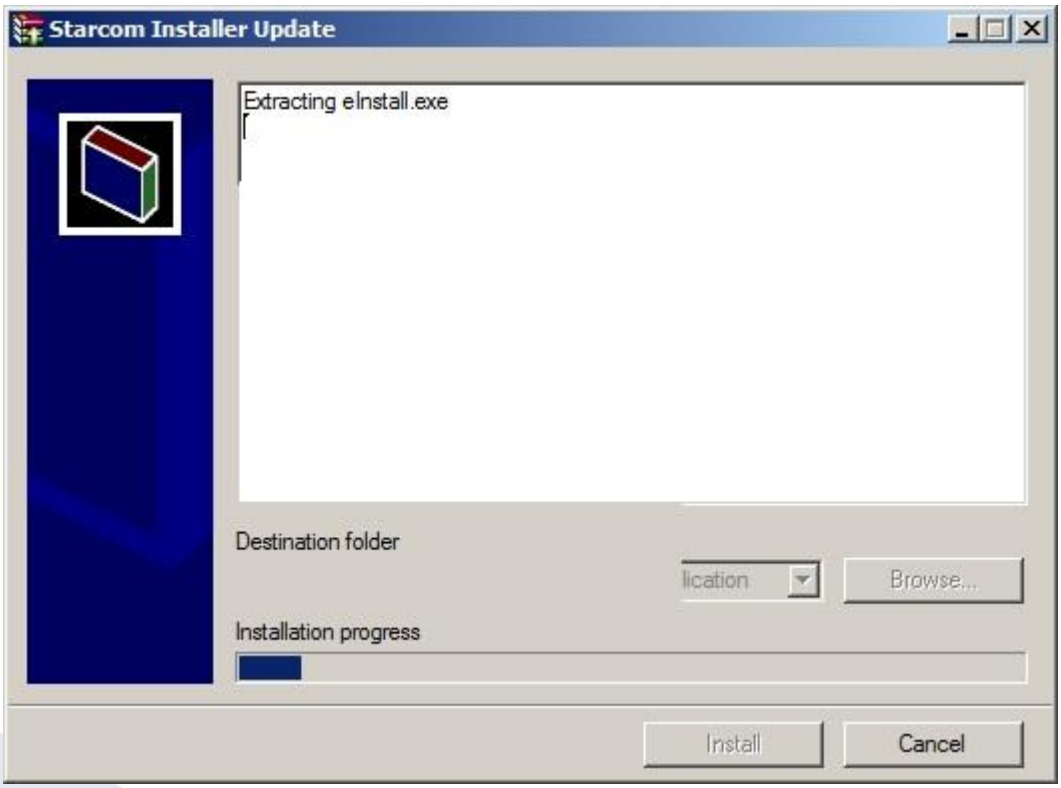
Click **Run**. The Starcom Installer Update window appears.

Starcom Installer Update
Hello!
This will update the Starcom software that you own. In order to complete the upgrade, please enter the drive where you installed your software to (eg: C:\ or D:\).
Enjoy!
Destination folder
C:\Program Files\StarcomSystems\InstallerApplication
Browse...
Installation progress
Install
Cancel

Verify that the Destination folder points to the location where the Starcom Installer software is installed and click **Install**. A Windows Security dialog box appears. Click **Yes**. The Confirm file replace dialog box appears.



Click **Yes to All**. The installation starts and a progress bar appears in the window, indicating the progress of the installation.



The Starcom Installer Update window closes, when the update is complete.

Installing the cable driver

The Triton R cable driver can be downloaded from the following link:

http://www.ftdichip.com/Drivers/VCP.htm

Download the driver for the proper Windows version.

The driver Installation Guide can be found at the following location:

http://www.ftdichip.com/Support/Documents/InstallGuides.htm

Download the Installation Guide for the proper Windows version. Follow the instructions in the Guide to install the cable driver.

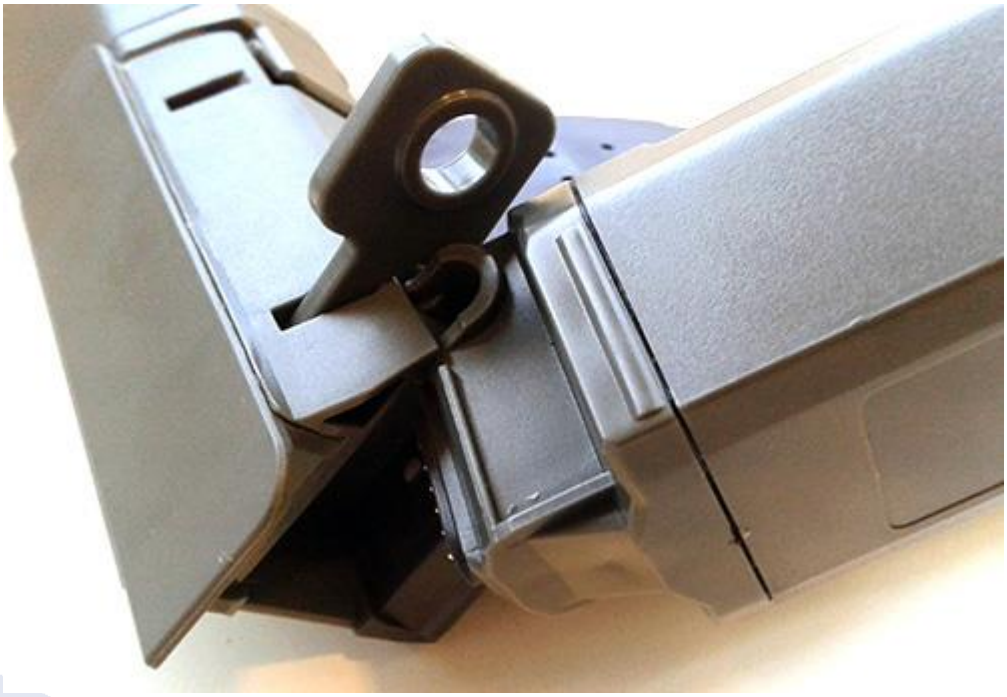
Connecting and disconnecting the unit parts

To connect the Main part and the Battery to the Tail, insert the part into the port on the side of the Tail, turn and push it inwards until it clicks into place.

To disconnect the Main part and the Battery, use the plastic key.

Push the key into the rectangular hole located next to the part, as shown in the following image.

The part will be released. Turn and pull the part out.

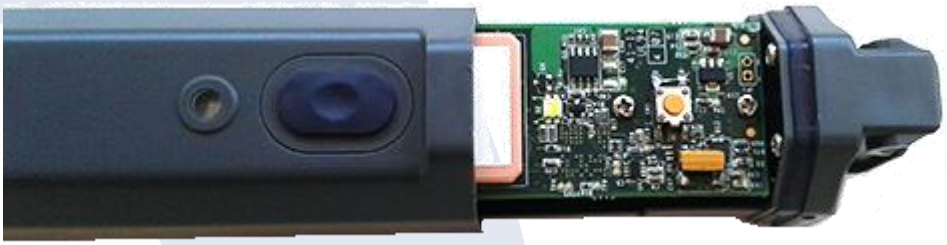


Inserting the SIM card

Disconnect the Main part from the Tail. Remove the protective rubber cover from the side of the Main part.

Unscrew the 2 screws located underneath the rubber cover, as shown in the following image.

Hold the Main part with one hand, take the connector side with the other hand and pull it out to release the inner part from the outer case.



Gently push and pull back the SIM card holder to release and open the SIM card slot.

Place the SIM card in the SIM card slot with its gold contacts facing down, as shown in the following image.

Lower the SIM card holder back to the horizontal position. Gently press and push the SIM card holder forward to snap it back into place.

Slide the inner part back into the Main case, fasten the screws and reattach the protective rubber cover.

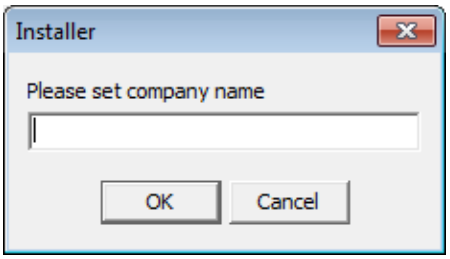
Connecting the unit to the computer

Press the Operation button to turn the unit on.

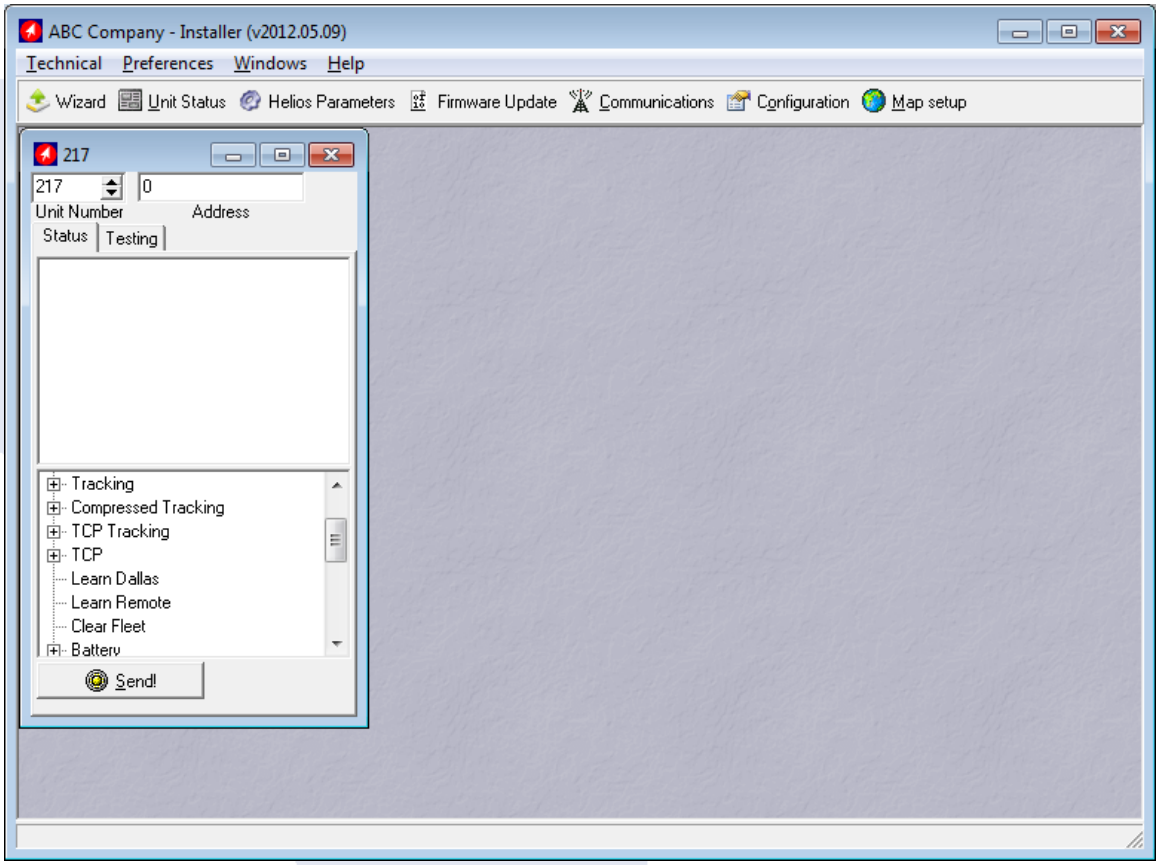
Connect the Triton R programming USB cable to the USB output on the unit and to the USB port on your computer.

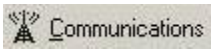
Configuring the unit

To open the Installer application, from the **Start** menu select **Starcom Systems > Installer Application**. The Installer company name window appears.

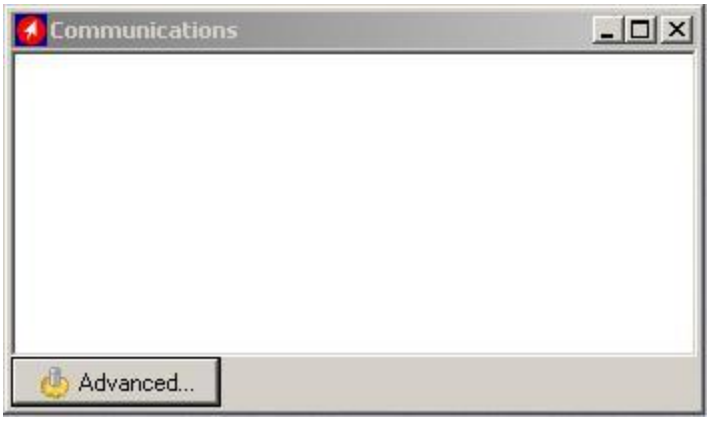


Enter your company name and click **OK**. The Installer window appears.



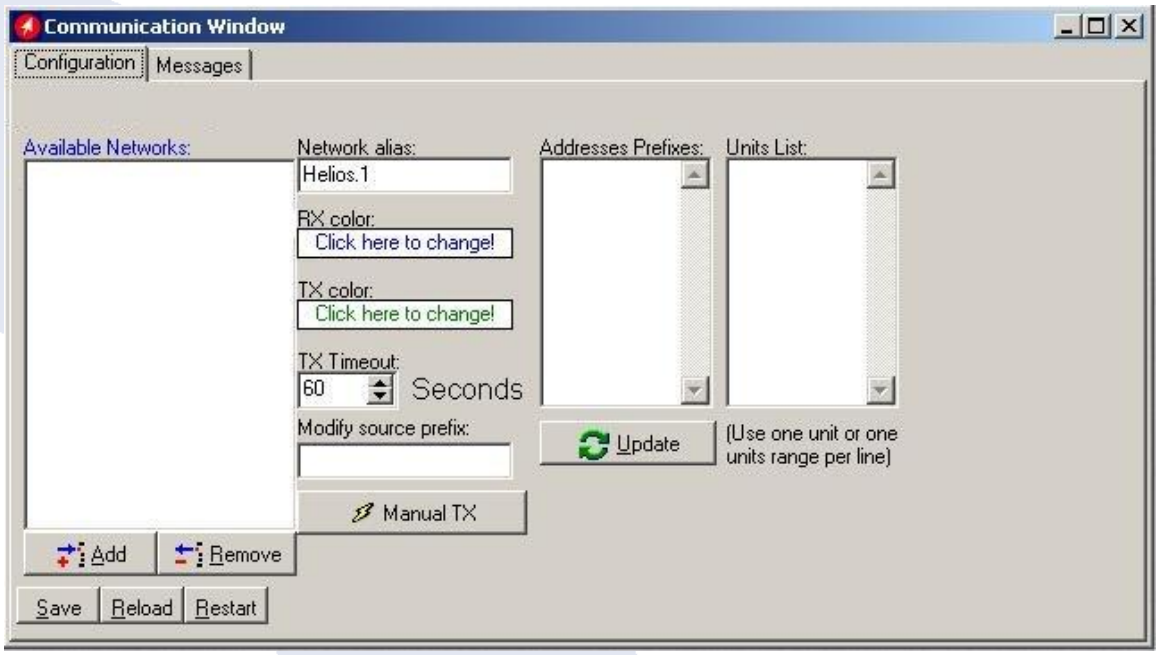
Click **Technical > Communications**, or press the **Communications** button 

on the taskbar at the top of the window.



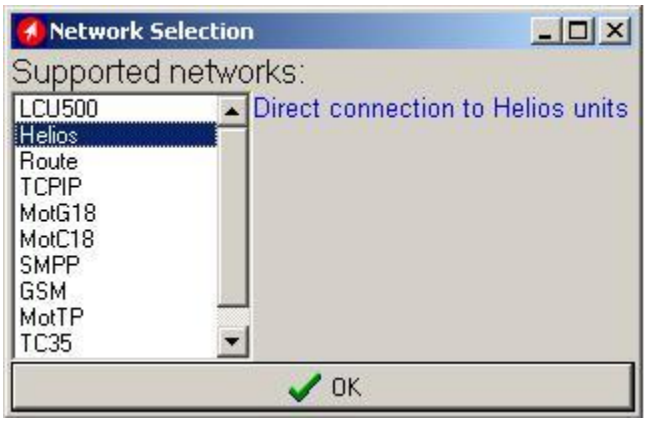
Click the **Advanced** button

. The Communications Window will appear.



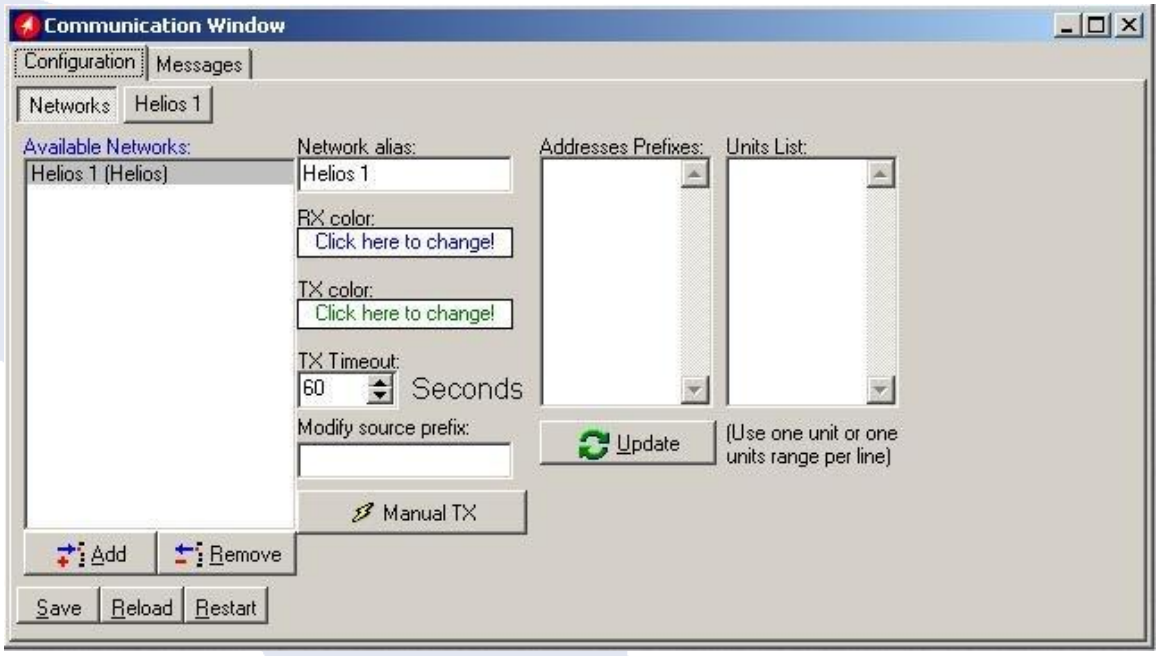
Click the **Add** button

. The Network Selection window appears.

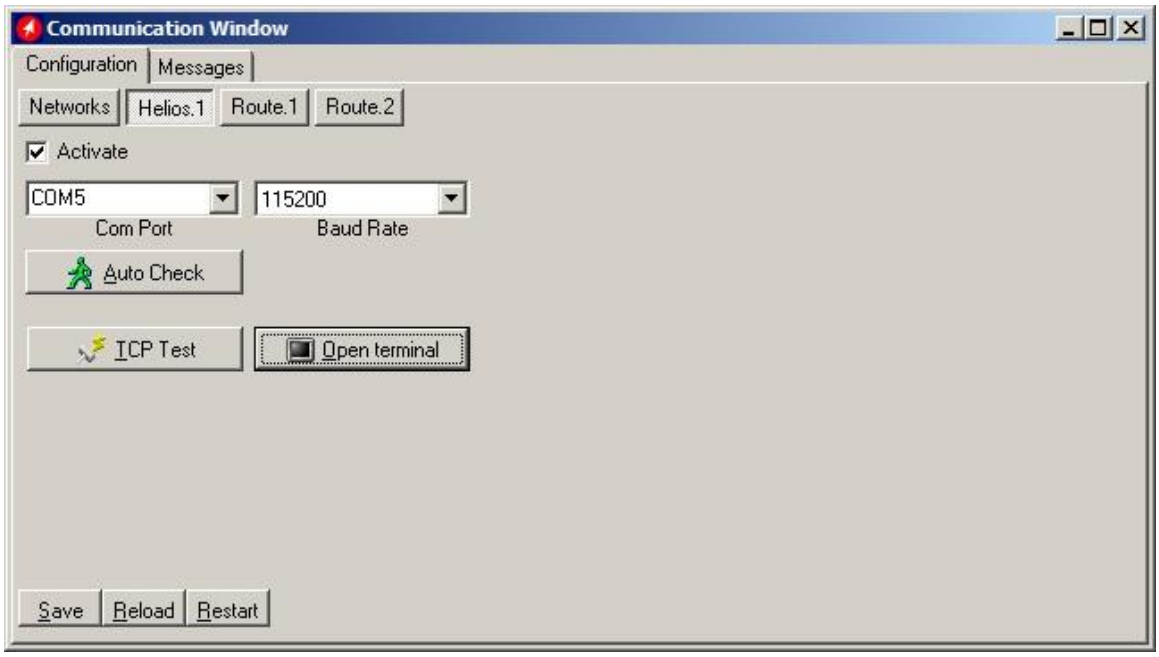


Select **Helios** from the list and press **OK** to add a Helios network.

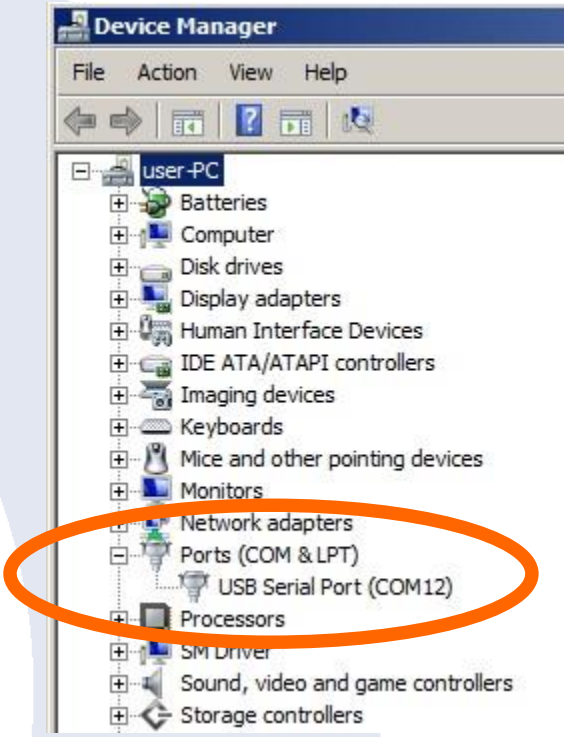
The Communications Window will now display the new connection in the Available Networks list, which is named **Helios 1**. (The name "Helios" in this case of the unit connection to the Installer applies globally to all unit types).



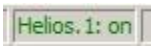
Click on **Helios.1** button to configure and activate the connection.



Select the COM port number of the Triton R cable port in the **Com Port** menu. In order to verify the COM port being used by Triton R in your computer, go to **My Computer > Manage > Device Manager > Ports**.

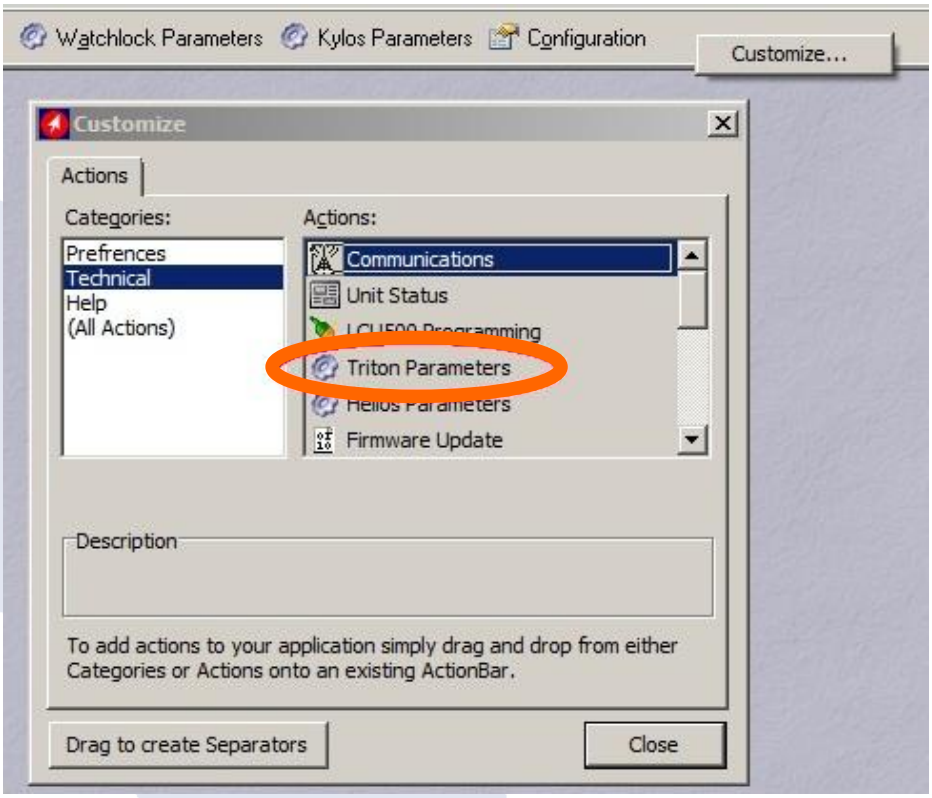


Set the **Baud Rate** to 115200. Check the **Activate** checkbox and click **Save**.

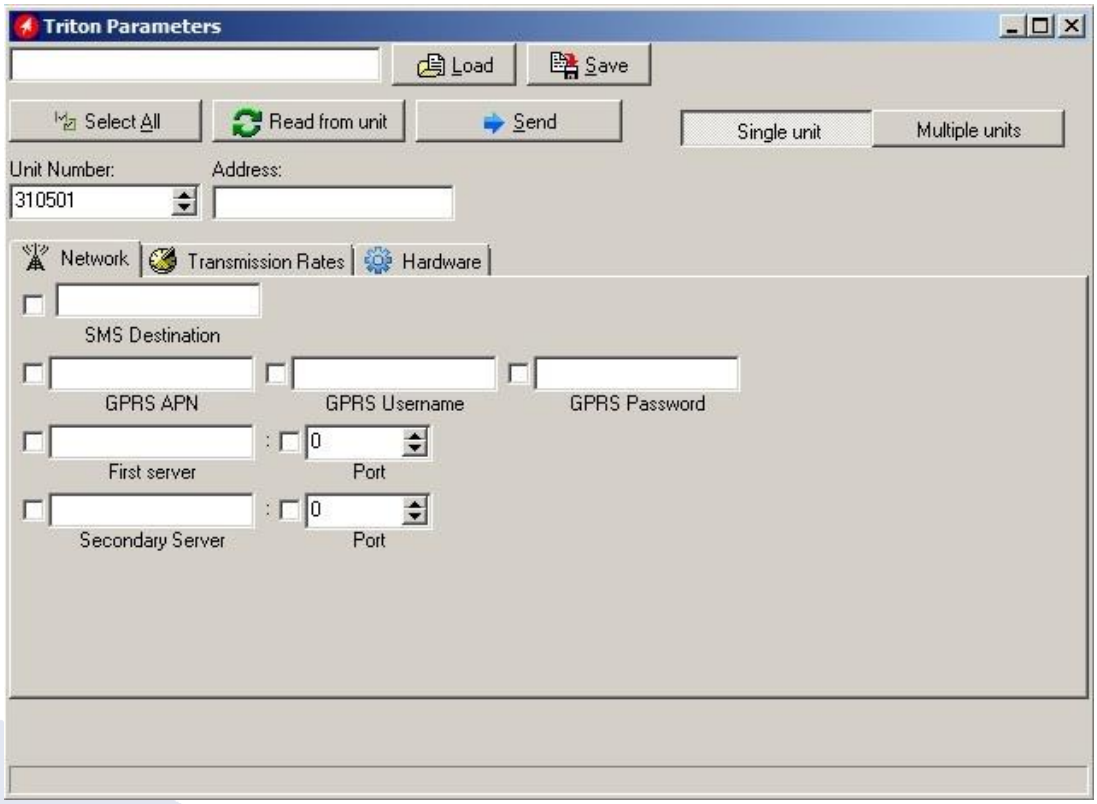
If Triton R has connected successfully, a "Helios.1: on" notification will appear in green color at the bottom left corner of the Installer application main screen 

.

To access the unit parameters, press **Technical > Triton Parameters**, or right click on the taskbar at the top of the Installer application window and press **Customize**. Select **Triton Parameters** and drag/drop it into the taskbar.



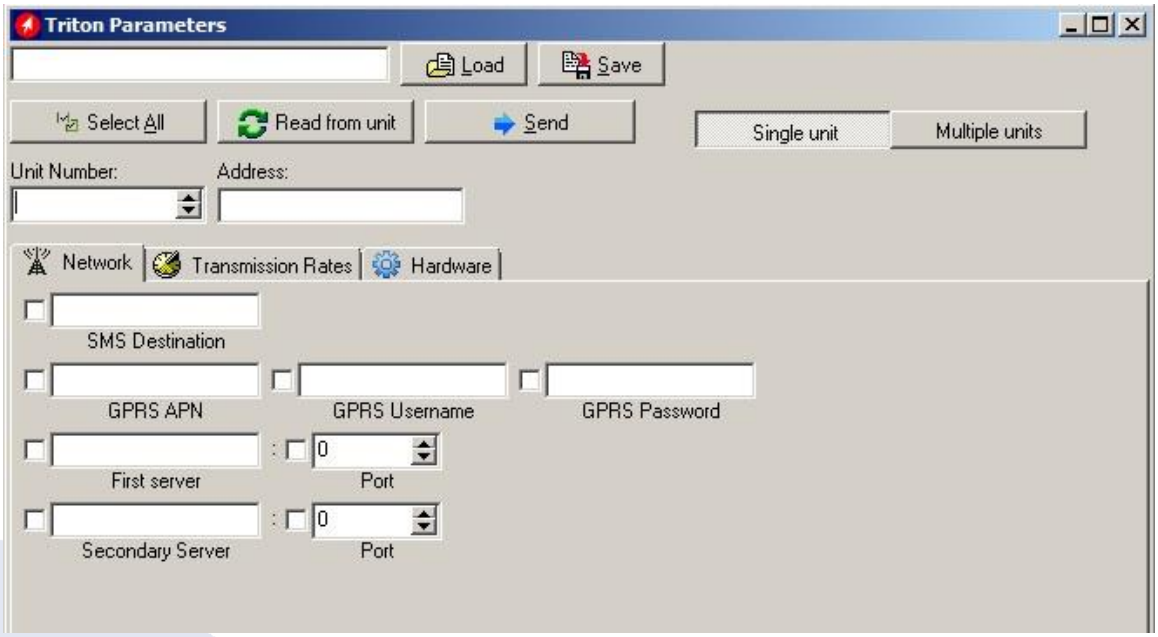
Press on **Triton Parameters** and use the settings to configure the unit.



Press the **Read from unit** button to read the parameters already configured in the unit.

Network settings

This tab allows you to enter all the parameters necessary for the unit to connect to the network.



SMS Destination

The unit transmits via GPRS by default and via SMS as a backup, when GPRS connection is not available. The number to be entered in the **SMS Destination** field is the SIM card number used in the SMS Terminal unit connected to the routing server, or the SMPP target number. For more information, see *SMS Notifications guide*.

APN settings

The APN settings are essential in order for the Triton R unit to transmit messages and alerts. The APN settings are provided by your cellular operator with the SIM card you are using in the Triton R unit.

GPRS APN (Access Point Name) – the name of the gateway provided by your cellular operator (e.g. internet).

GPRS Username – username provided by your cellular operator (e.g. blank).

GPRS Password – password provided by your cellular operator (e.g. blank).

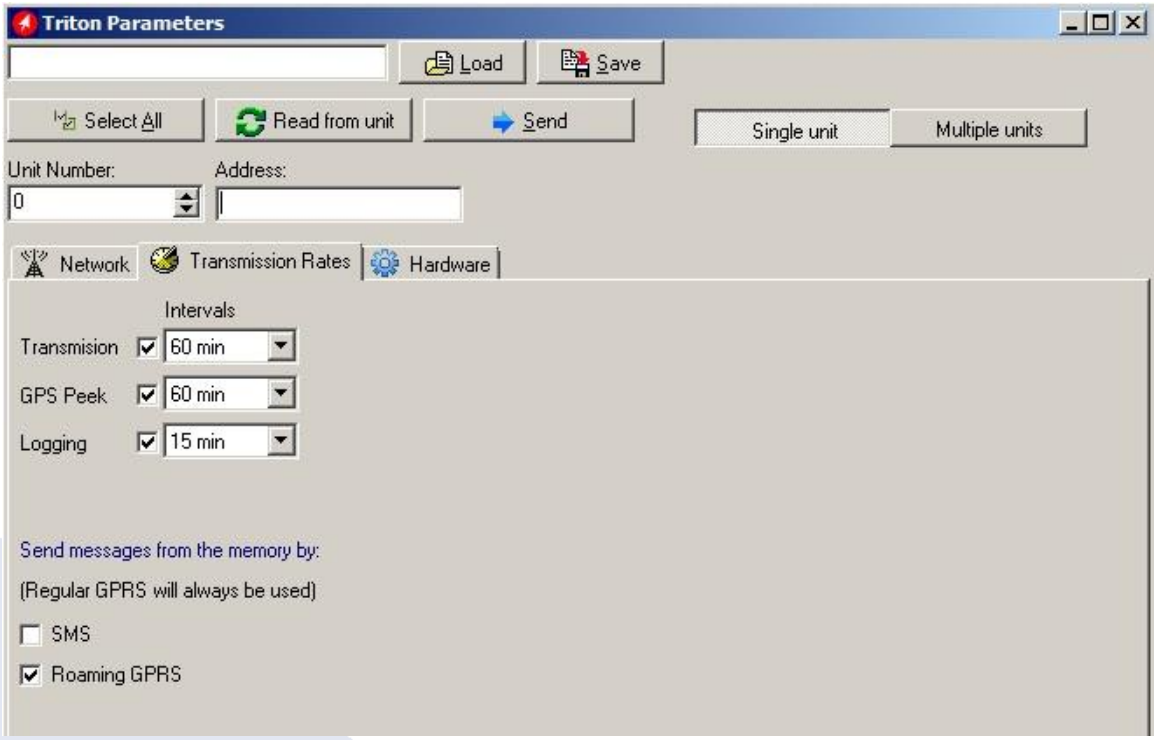
First server – main routing server, which the units transmit to (by default, it is Starcom Systems server 1).

Secondary server – auxiliary routing server, which the units transmit to (by default, it is Starcom Systems server 2).

Port – port open for communication on the routing server (default port is 6600).

Transmission Rates settings

This tab allows you to configure the intervals of regular tracking transmissions, which define how often the unit will transmit its status.



Transmission – interval of regular tracking transmissions, which defines how often the unit will transmit its status.

GPS Peek – interval of the GPS update, which defines how often the unit's GPS module will update its location.

Logging – interval of data logging, during which the unit will wake up only for a few seconds to record its current state, but will not transmit (useful for temperature/humidity/light logging). The information will be transmitted along with the next transmission (tracking/opening/etc.).

Transmission and GPS Peek values are usually left the same. In some instances, these parameters can be configured with different values. For example:

GPS Peek can be *faster* than Transmission when between the regular transmissions the unit can enter or exit a specified perimeter. In such case, a

Perimeter event created on Starcom Online will be triggered by the change in the unit location. For more information, see *Chapter 7 – Monitoring*.

GPS Peek can be *slower* than Transmission when the unit is installed in a remote location for long periods of time, when the GPS update is not really required. In such case, Transmission can be set for 1 day, for example, and GPS Peek can be set for 5 days (highest value) to save battery power.

For the testing period, you can set the transmission rates at a higher interval (e.g. 10 minutes). Once the unit is tested, you can set the transmission rate at a proper working interval (e.g. 5 hours).

Transmission rates also determine how long the battery will stay charged. Every transmission uses the battery. The faster the transmission rate, the faster the battery will end. To calculate the battery life based on transmission rates, please use the following file:

http://wiki.starcomsystems.com/wiki/images/English/Triton_battery_life_expectancy.xlsx

Please note that these are the regular scheduled Tracking transmissions and they do not include the additional random transmissions and alerts, like Light On/Off, Location Update, etc., which also use the battery.

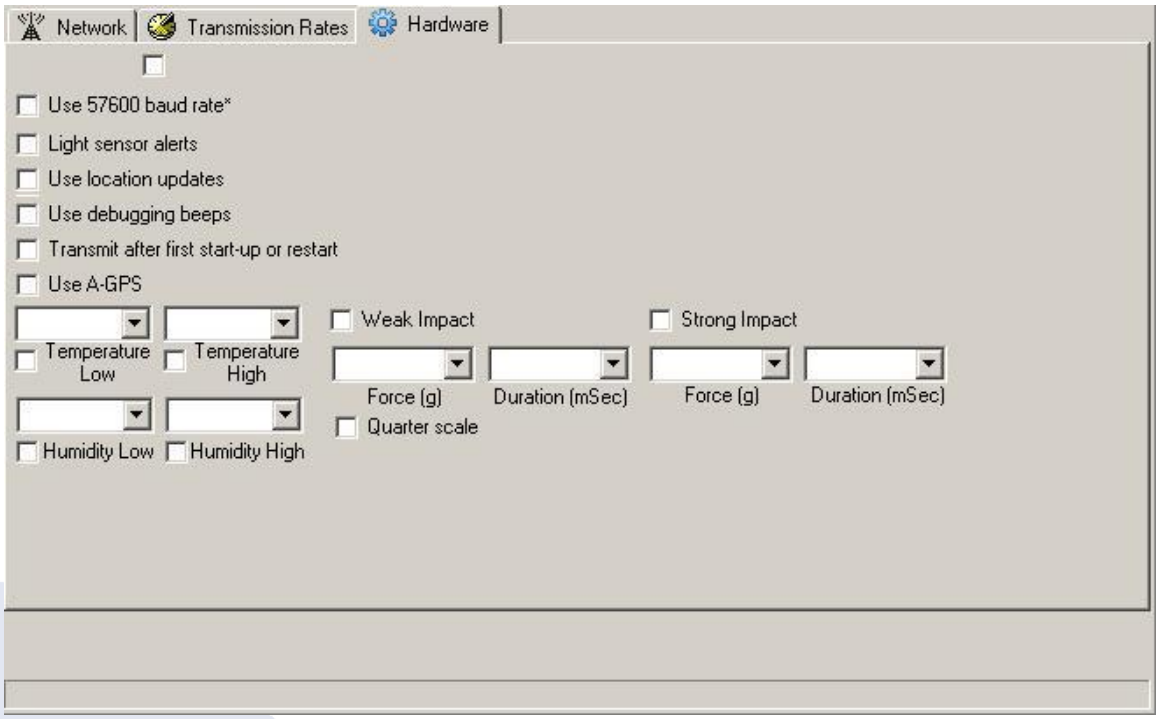
When the device is out of GPRS coverage, the messages will be saved to the unit memory. Messages saved in the memory can be sent when the unit resumes the connection to home cellular network, or to the roaming network, if the SIM card used in the unit has a roaming service enabled by your cellular provider.

SMS – select this option if you want the unit to transmit messages saved in the memory via SMS. The unit transmits by GPRS by default and by SMS as a backup when GPRS connection is not available. For more information, see *Appendix A – Unit Communication in Starcom Systems*.

Roaming GPRS – select this option if you want the unit to transmit messages saved in the memory via roaming GPRS. In order for this to work, the SIM card used in the unit must have a roaming service enabled by your cellular provider.

Hardware settings

This tab allows you to configure various hardware settings.



Use 57600 baud rate – if this option is activated, the device will use 57,600 bps to communicate.

Light sensor alerts – light sensor enabling option. Once activated, the unit will transmit Light On / Light Off alerts based on the light sensor readings.

Use location updates – GPS enabling option. Once activated, the unit's GPS module will be turned on upon every transmission, and location update transmissions will be sent.

Use debugging beeps – factory testing setting. Do not use.

Transmit after first start-up or restart – if this option is activated, a "Power On" message will be transmitted whenever the unit is powered on for the first time, or gets restarted.

Temperature Low / Temperature High – temperature sensor parameters used to define the values for low and high temperature alerts.

Humidity Low / Humidity High – humidity sensor parameters used to define the values for low and high humidity alerts.

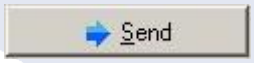
Weak Impact / Strong Impact –accelerometer parameters used to define two types of impact (hit, push, drop. etc.) on the device.

Force (g) – determines the threshold of the force needed to be measured in order to send an alert. Select "Disabled", if you don't wish to use the alert.

Duration (msec) – determines the duration of the force needed to be measured in order to send an alert.

The default values configured in the unit are based on the laboratory testing results, they were found to be acceptable in most cases. These values can be tested and changed according to the specifics of your work. To change these values according to specific conditions, you need to test the unit with different values and choose the best option. The lower the setting, the more often the unit will respond to a weaker impact.

Quarter scale – if on, the Weak Impact force will be scaled in quarter of a g. This option can be used to make the accelerometer more sensitive to smaller impacts.

Once all the necessary parameters are set, press the **Send** button 

to send the changes you made to the unit.

Saving the configuration

If you are planning to configure other units with the same parameters, you can save these settings as a *.mem file. Click the **Save** button

in the Triton Parameters window, select the location where you want the configuration file to be saved on your computer, name the file and press **Save**.

Configuring a new unit with the saved configuration

To configure a new unit with the saved parameters, click the **Load** button

in the Triton Parameters window, browse to the location where you saved the configuration file, select the file and press **Open**. Click the **Select All** button

to select all the parameters and press the **Send** button

to send the changes to the unit.

5 Testing

It is important to test the unit connection to the network, the correct GPS location, the unit status and inputs response before installing the unit in the container. In order to do this, you need to perform the following steps.

TCP test

This test verifies that the SIM card is open to the GPRS network, the unit can connect to the network and make successful TCP/IP transmissions.

Press the **TCP Test** button

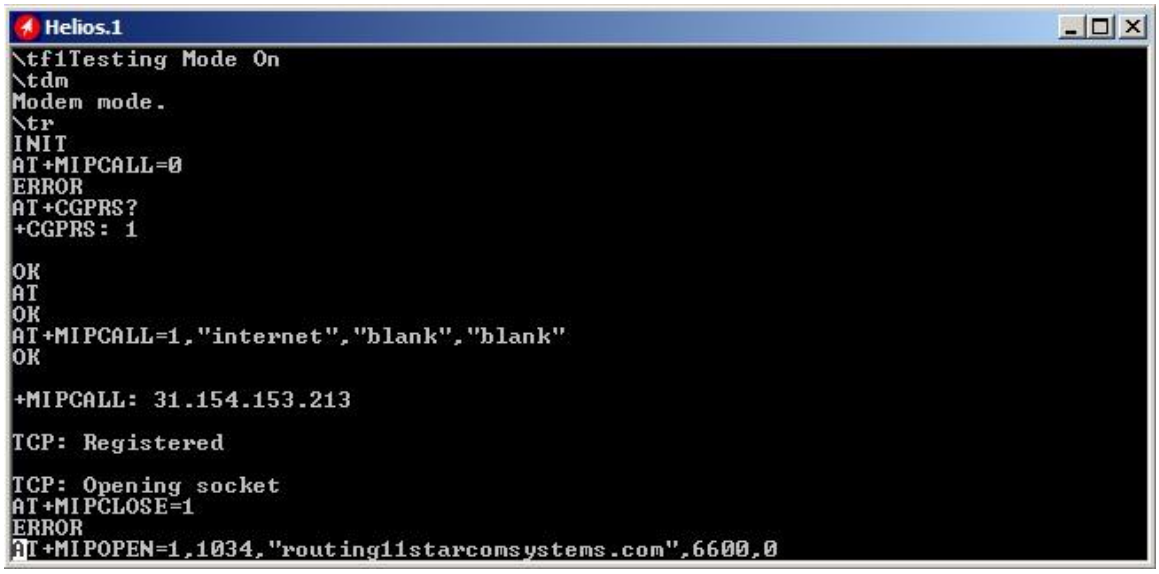
(**Communications > Advanced > Communication Window > Configuration > Helios.1**). Wait a few minutes until you receive a pop-up window with a successful connection message.

If at the end of the TCP Test you do not receive a successful message, check your APN settings (Triton Parameters > Network). Contact your cellular provider and make sure the SIM card is open for GPRS. Verify that your SIM card is not protected by a PIN code. If necessary, use a mobile phone to cancel the PIN code.

You can also perform the test manually using the **Terminal** window. Open the Terminal window (**Communications > Advanced > Communication Window > Configuration > Helios.1 > Open Terminal**) and type the following commands:

\tdm and press **Enter** (Modem mode). The modem will be turned on.

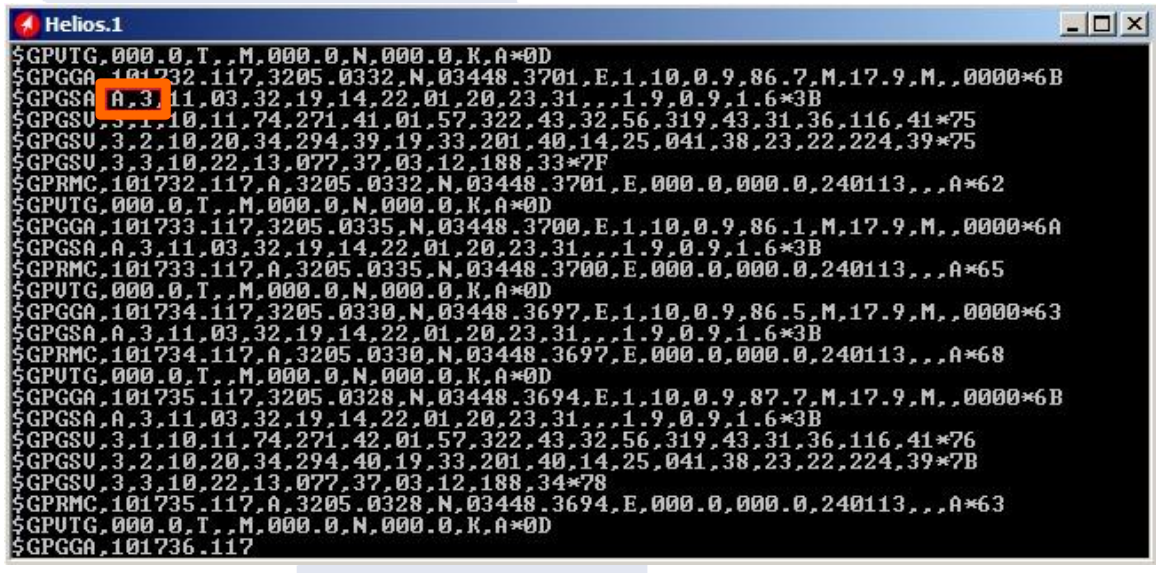
\tr and press **Enter**. This command runs a series of actions to check the parameters such as reception level, visible networks and registered network, SIM card state and information. It also attempts to connect to the routing server. If successful, a "TCP: Send+" message will appear in the Terminal window.



GPS test

NOTE: If you're testing the unit inside the building, it will not be able to get a GPS signal in most cases. In order to get a proper GPS location, the unit has to be placed outside the building, or outside the window, where it can access the satellites.

Open the Terminal window (**Communications > Advanced > Communication Window > Configuration > Helios.1 > Open Terminal**) and type **\tdg** (GPS mode). GPS readings will be displayed. When you see "A,3"... reading, it will indicate a GPS fix signal.



If you do not see any response, type **\tg1** to turn the GPS on and repeat the test.

Unit Status

Open the **Unit Status** window. Enter the unit number in the **Unit Number** field, select **Request status** and press **Send**. The unit information will appear.

Click on the **Inputs** tab, press the Door and Operation buttons, cover and uncover the light sensor, press Request status and check the response in the Unit Status window. Use the **Location** tab to check the unit's GPS data. Use the **Various** tab to see the unit information.

After all the tests have been performed successfully, the unit is ready to be installed in the container.

6 Installation

Attach the Main part and the Battery (optional) to the Tail. Attach the Tail that contains magnets onto the container door frame with the main part extending outside the container, as shown in the following images.

The Door button will be pressed by the closed door.

NOTE: Before installing the unit, press the Operation button on the Main part shortly and make sure the LED color is green. Otherwise recharge the battery.

Charge the battery for at least **12 hours** prior to first use. After that, charge the battery for at least **6 hours** before each use.

When the Triton unit is installed, press the Operation button on the Main part for 3 seconds until you see the LED turn white.

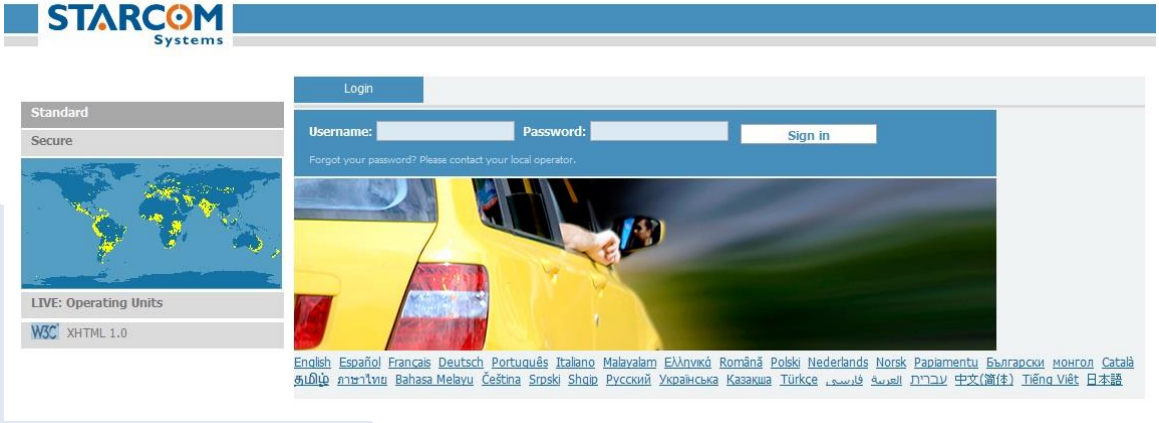
Release the button and make sure that both green and red blinks are over.

Make sure you get a notification for the Button On.

7 Monitoring

After the unit is installed in the container, you can monitor its status on **Starcom Online**. Starcom Online is a web based fleet management application with a flexible event generator, which allows to set customizable notifications and alerts.

In your browser, go to http://www.starcomsystems.com/online. Enter your username and password in the **Username** and **Password** fields, and click **Sign in**.

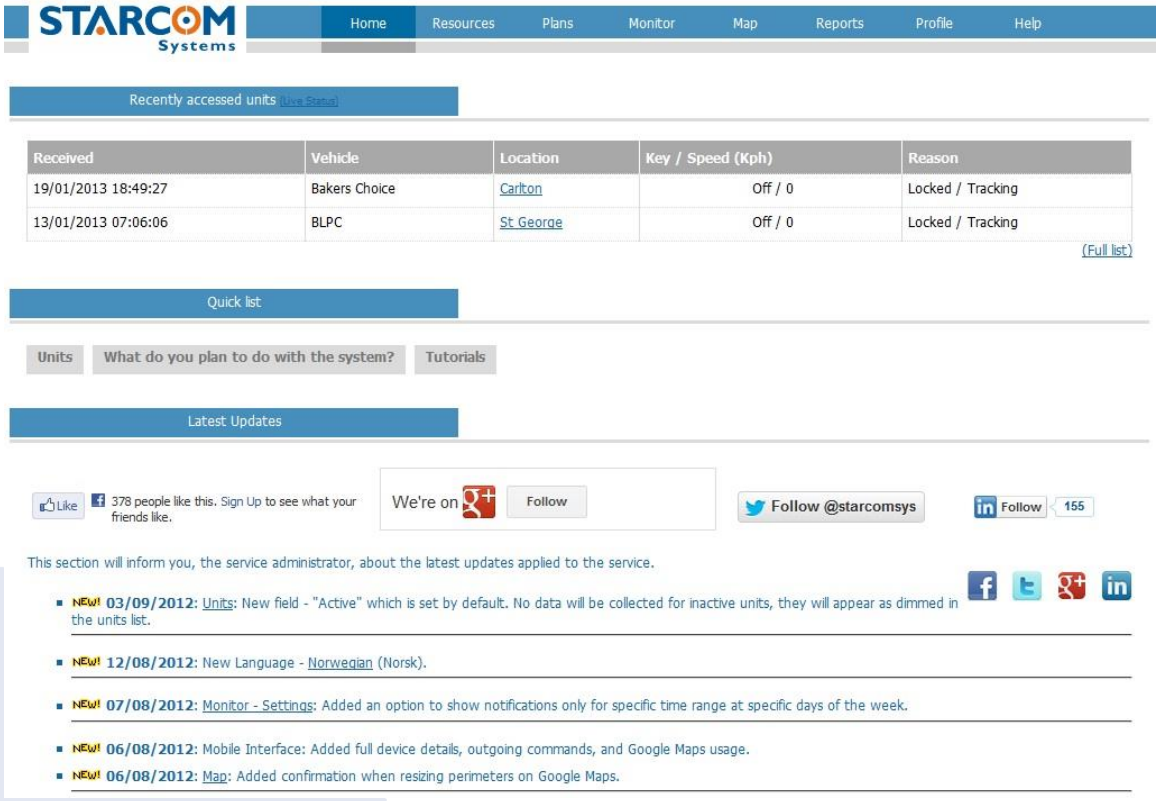

Login
Standard
Secure
LIVE: Operating Units
XHTML 1.0
Username:
Password:
Sign in
Forgot your password? Please contact your local operator.
English Español Français Deutsch Português Italiano Malayalam Ελληνικά Română Polski Nederlands Norsk Papiamentu Български монгол Català
தமிழ் ภาษาไทย Bahasa Melayu Čeština Srpski Shqip Русский Українська Казакша Türkçe فارسی العربية עברית 中文(簡体) Tiếng Việt 日本語

Starcom Online horizontal menu bar features the following categories:

- **Home** – lists the most recently accessed units, including their location.
- **Resources** – allows to manage the unit and customer information.
- **Plans** – allows to create and manage events and alerts.
- **Monitor** – monitors the events and alerts from the unit.
- **Map** – displays the actual location of the unit on the map.
- **Reports** – generates reports of the unit activity.
- **Profile** – allows to configure your user properties.
- **Help** – contains tutorials and knowledge base.

Home

The Home section shows recently accessed units and latest site updates.


STARCOM Systems
Home
Resources
Plans
Monitor
Map
Reports
Profile
Help
Recently accessed units
Received
Vehicle
Location
Key / Speed (Kph)
Reason
19/01/2013 18:49:27
Bakers Choice
Carlton
Off / 0
Locked / Tracking
13/01/2013 07:06:06
BLPC
St George
Off / 0
Locked / Tracking
(Full list)
Quick list
Units
What do you plan to do with the system?
Tutorials
Latest Updates
Like
378 people like this. Sign Up to see what your friends like.
We're on
Follow
Follow @starcomsys
Follow
155
This section will inform you, the service administrator, about the latest updates applied to the service.
NEW! 03/09/2012: Units: New field - "Active" which is set by default. No data will be collected for inactive units, they will appear as dimmed in the units list.
NEW! 12/08/2012: New Language - Norwegian (Norsk).
NEW! 07/08/2012: Monitor - Settings: Added an option to show notifications only for specific time range at specific days of the week.
NEW! 06/08/2012: Mobile Interface: Added full device details, outgoing commands, and Google Maps usage.
NEW! 06/08/2012: Map: Added confirmation when resizing perimeters on Google Maps.

In the Home section, you can find the following additional links:

Live status – displays the current status of all live units, as shown in the following image.

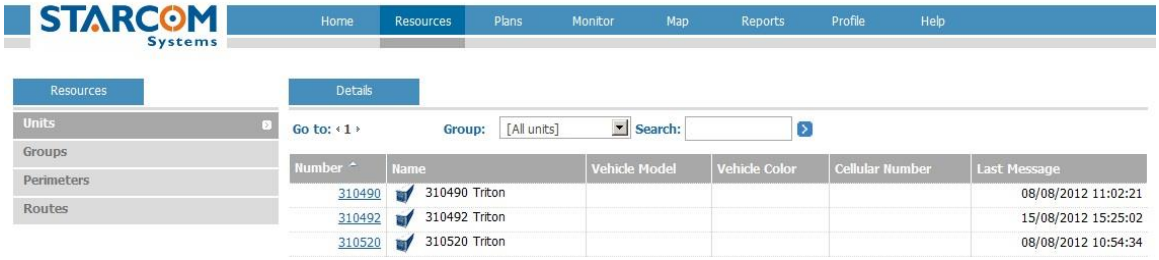
Full list – opens the Resources section that displays a full list of all your units.

Location – opens the Map section that displays a map showing the current location of the unit.

Quick List – links that enable you to access the Resources and Plans sections.

Resources

The Resources section shows all your units.



On the left side, the Resources section features the following tabs:

Units – lists the units.

Groups – lists the groups of units and helps you create new and modify the existing groups.

Users – lists the users and helps you create new and modify the existing users.

Perimeters – lists perimeters and helps you define new and modify the existing perimeters.

Units

The **Units** page features the **Details** area, which arranges the unit information in the following columns:

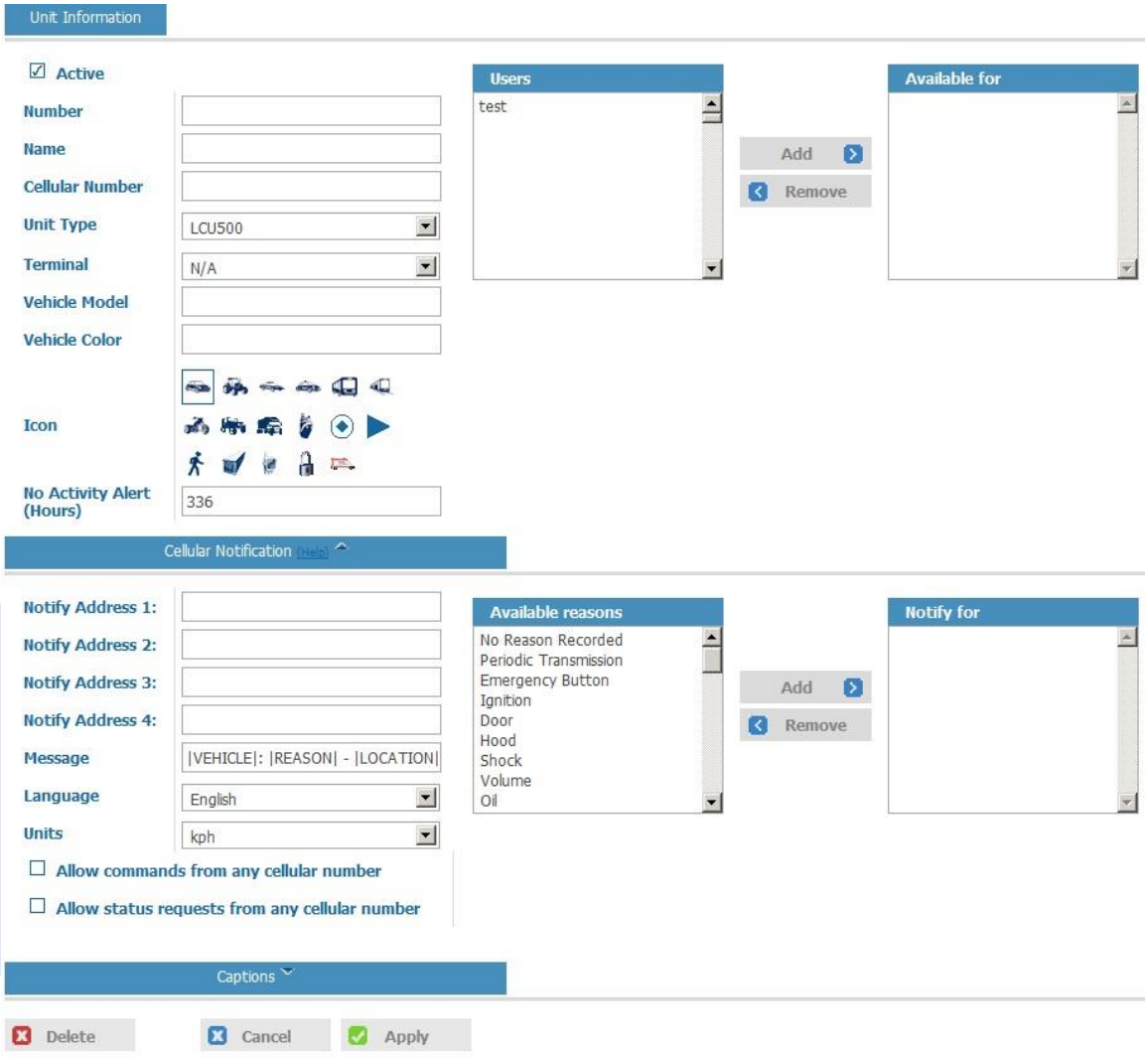
Number – the unit serial number. Clicking on the unit number link will display the **Unit Information** page, where you can modify the unit information.

Name – displays the icon and the name of the unit. Clicking on it will reveal a pop-up menu with the quick access links to the Map and the Reports sections.

Cellular Number – displays the phone number of the SIM card installed in the unit.

Last Message – displays the time and date of the last message transmitted by the unit.

To create a new unit, click **New** (not available for evaluation kit users). The Unit Information page opens.



Active – when selected (set by default), makes the unit active on Starcom Online. To make the unit inactive, deselect this checkbox. No data will be collected for inactive units; they will appear as dimmed in the units list.

Use this section to enter the unit **Number** and **Name**. In the **Cellular Number** field, enter the number of the SIM card installed in the unit. In the **Unit Type** list, select Triton.

No Activity Alert (Hours) – used to receive an alert when the unit has stopped transmitting. The default value is 336 hours (2 weeks).

In the **Users** list, select the users you want to make the unit available for and click **Add**. The users will be moved to the **Available for** list.

Use the **Cellular Notification** section to configure the cellular notifications for different events.

Notify Address 1-4 – enter the cellular numbers you want to receive notifications to when the events occur.

Message – modify the notification message format.

Language – select the language in which you want to receive the message.

Units (kph/mph) – select the measurement you want to receive the speed data in.

In the **Available reasons** list, select the reasons you want to receive an alert for and click **Add**. The reasons will be moved to the **Notify for** list.

When finished, click **Apply**. The new unit is saved.

To modify a unit, in the **Units** page, click on the unit name link of the unit you want to modify. The Unit Information page appears. Modify the unit details as required. Click **Apply**. The modified unit details are saved.

To delete a unit, in the **Units** page, click on the unit name link of the unit you want to delete. The Unit Information page appears. Click **Delete**. The unit is deleted.

Groups

You can create new and modify the existing groups of units.

To create a new group, click **New**. The Group page opens.

In the **Name** field enter the name of the new group.

In the **Units** list, select the units you want to include in the group and click **Add**. The units will be moved to the **In Group** list.

In the **Users** list, select the users you want to include in the group and click **Add**. The users will be moved to the **Available for** list.

In the **Sharing** section, click the respective checkbox, if you want the group to **Share Perimeters** or **Share Events**.

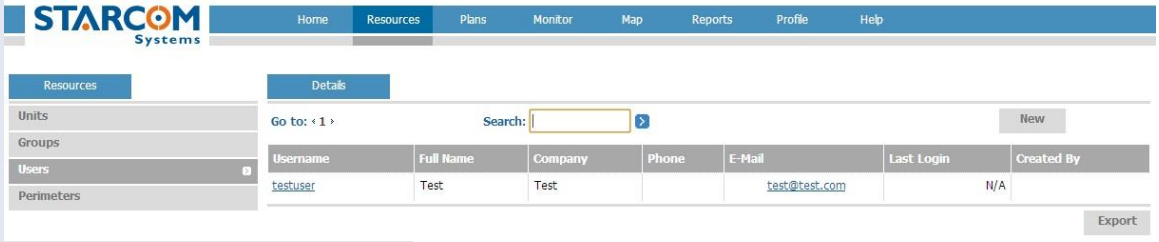
Click **Apply**. The new group is saved.

To modify a group, in the **Groups** page, click on the group name link of the group you want to modify. The Group page appears. Modify the group details as required. Click **Apply**. The modified group details are saved.

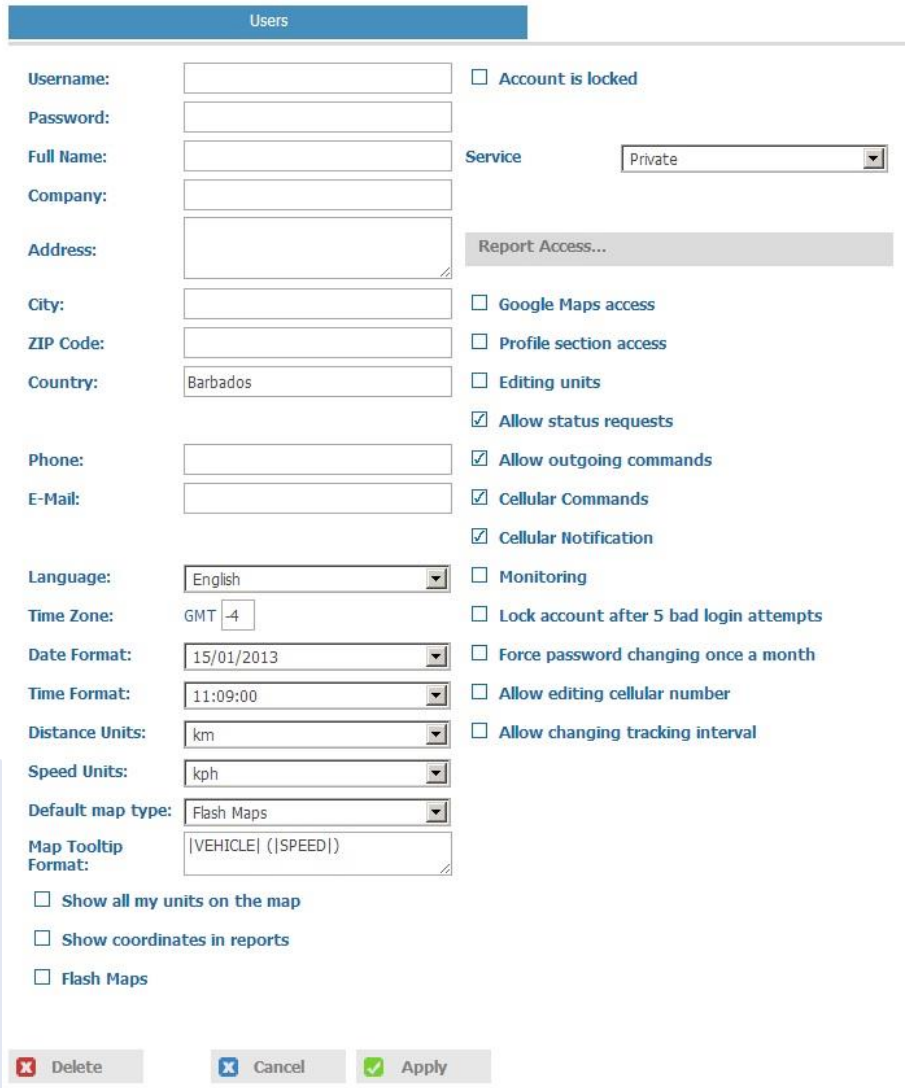
To delete a group, in the **Groups** page, click on the group name link of the group you want to delete. The Group page appears. Click **Delete**. The group is deleted.

Users

You can create new and modify the existing users.



To create a new user, click **New**. The Users page opens. Here you can enter the new user information and define their access permissions.



Besides entering the user information, you can select the following options:

Show all my units on the map –all the user's units will be displayed on the Map page. If this option is disabled, only the selected unit will be displayed.

Show coordinates in reports – the user's reports will include the GPS coordinates.

Flash Maps – enables the user to see flash maps.

Service: Private / Commercial / Advanced – defines the level of user access for the Plans and the Reports sections.

Report Access – allows to select which reports will be accessible for the user.

Google Maps access – enables Google Maps access on the Maps page.

Profile section access – enables the user to view his Profile section.

Editing units – enables the user to edit the unit details.

Allow status requests – enables the user to make unit status requests.

Cellular Commands – enables the user to send commands to the unit from a cellular phone.

Cellular Notification – enables the user to receive cellular notifications.

Monitoring – enables the user to view the Monitoring page.

Lock account after 5 bad login attempts – locks access to Starcom Online account after the user has made 5 bad login attempts.

Force password changing once a month – requires the user to change the password once a month.

Allow editing cellular number – enables the user to edit the phone number of the SIM card installed in the unit.

Allow changing tracking interval – enables the user to change the time of the unit tracking interval.

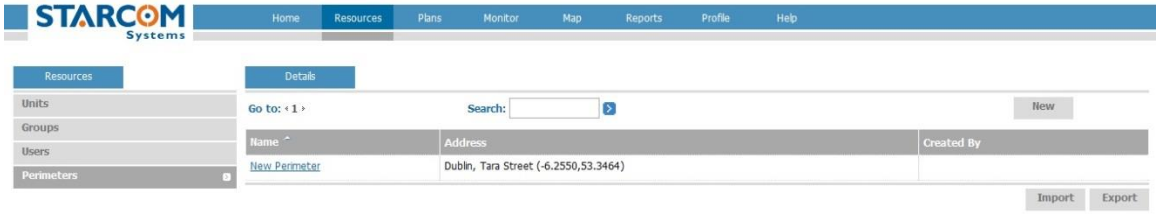
After you configured all the parameters, click **Apply**. The new user is saved.

To modify a user, in the **Users** page click on the user name link of the user you want to modify. The Users page appears. Modify the user details as required. Click **Apply**. The modified user details are saved.

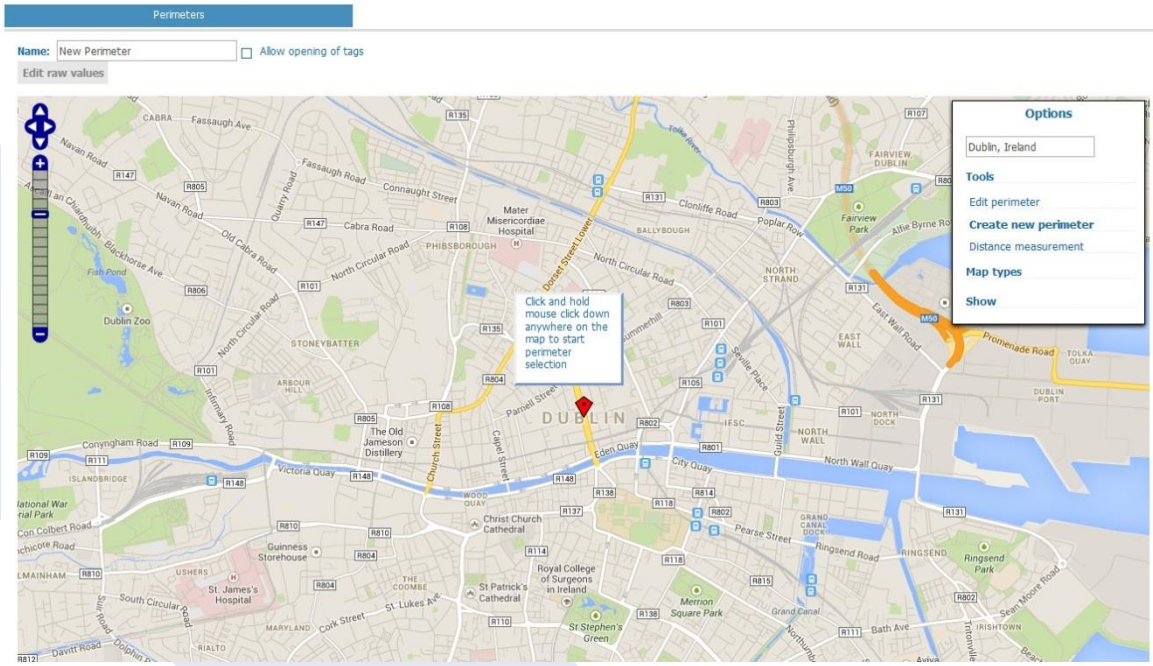
To delete a user, in the **Users** page click on the user name link of the user you want to delete. The Users page appears. Click **Delete**. The user is deleted.

Perimeters

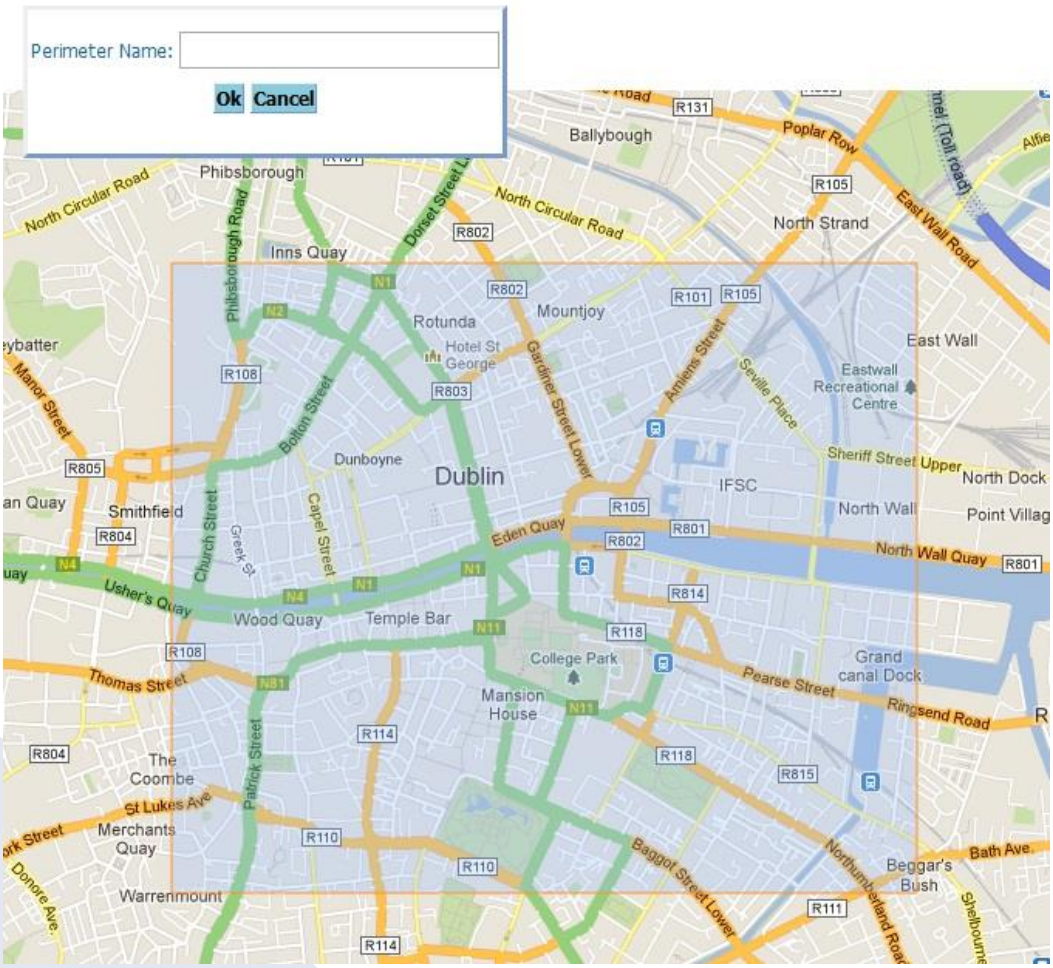
You can create new and modify the existing perimeters.



To create a new perimeter, click **New**. The Perimeters page opens. In the **Name** field, enter a name for the new perimeter.

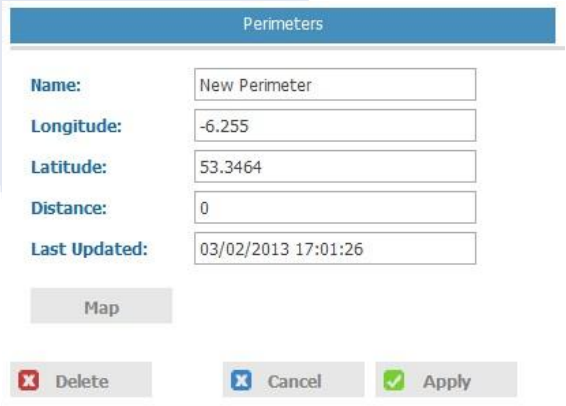


To create a new perimeter, click **Options > Tools > Create new perimeter** at the top right corner of the map. Click once anywhere on the map to start the perimeter selection (this point would be the top left corner of the perimeter). Move the mouse and click again anywhere on the map to finish the perimeter (this point would be the bottom right corner of the perimeter).



In the **Perimeter Name** field, enter the name of the perimeter. Click **Ok**. The new perimeter is saved and appears on the map.

To view/edit the GPS parameters of the perimeter, click **Edit raw values**. The raw parameters appear.



Modify the values as required. Click **Apply** to save the changes.

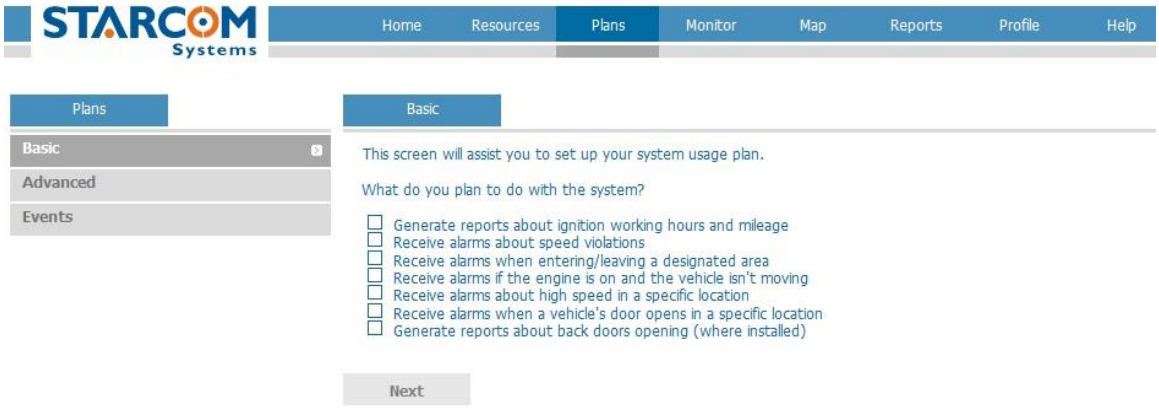
After you made all the changes on the Perimeters page, click **Apply**. The perimeter details are saved and the new perimeter appears in the list on the Resources section.

To modify a perimeter, in the **Perimeters** page click on the perimeter name link of the perimeter you want to modify. The Perimeters map page appears. Modify the perimeter as required. Click **Apply**. The modified perimeter is saved.

To delete a perimeter, in the **Perimeters** page click on the perimeter name link of the perimeter you want to delete. The Perimeters map page appears. Click **Delete**. The perimeter is deleted.

Plans

The Plans section enables you to create usage plans and to view plans that already exist.


STARCOM Systems
Home
Resources
Plans
Monitor
Map
Reports
Profile
Help
Plans
Basic
Advanced
Events
Basic
This screen will assist you to set up your system usage plan.
What do you plan to do with the system?
Generate reports about ignition working hours and mileage
Receive alarms about speed violations
Receive alarms when entering/leaving a designated area
Receive alarms if the engine is on and the vehicle isn't moving
Receive alarms about high speed in a specific location
Receive alarms when a vehicle's door opens in a specific location
Generate reports about back doors opening (where installed)
Next

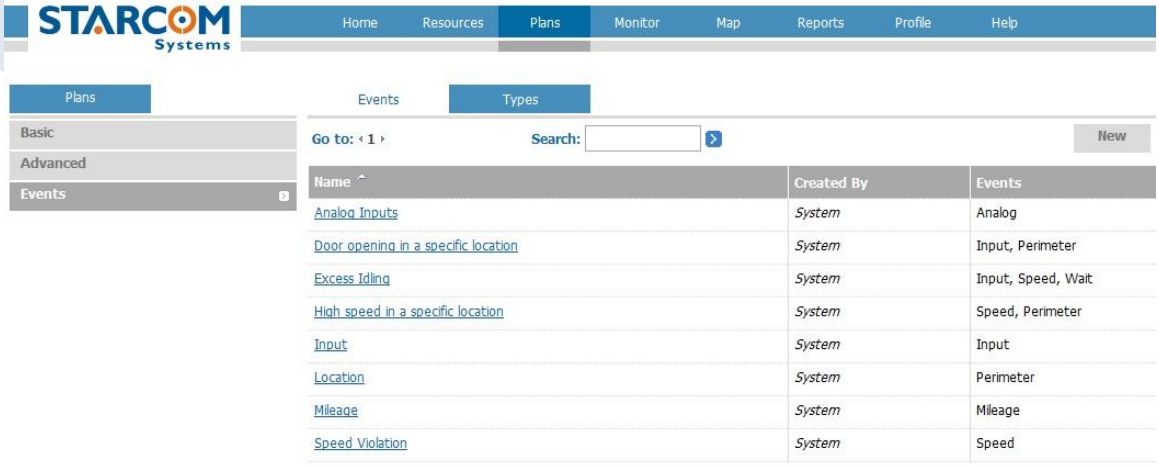
On the left side, the Plans section features the following tabs:

Basic – allows to set up basic plans for LCU500 units. Do not use.

Advanced – allows to set up advanced plans for LCU500 units. Do not use.

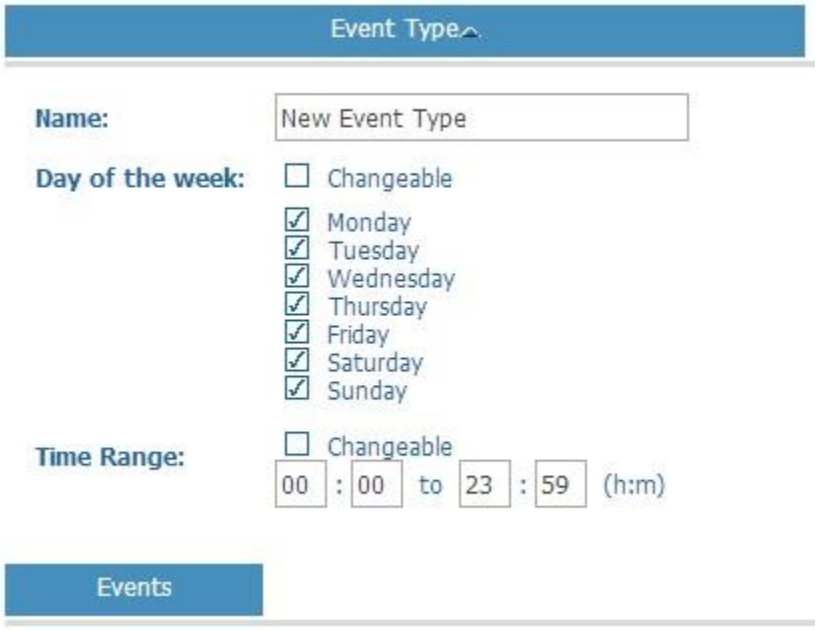
Events – allows to create events for your units.

To create a new event, you need to create an event Type first. Click **Types**. The Types page opens.

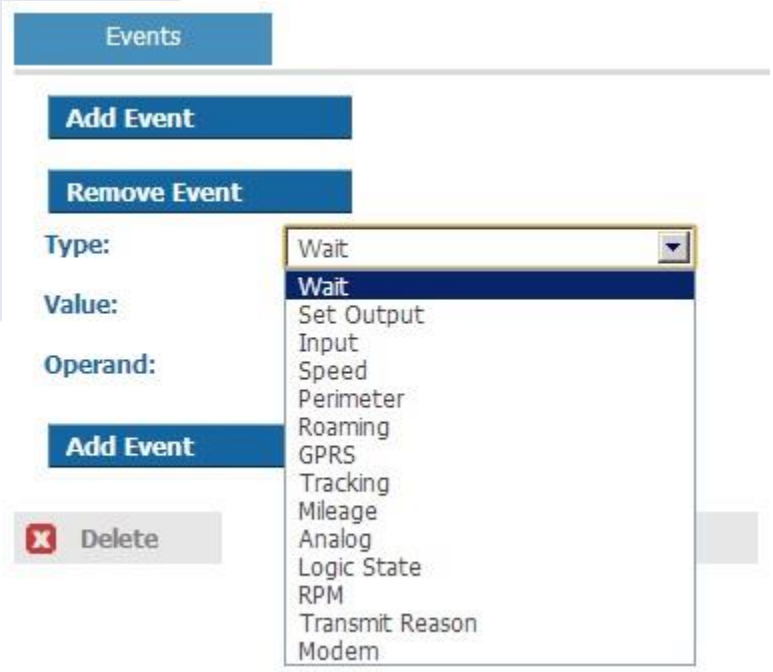


In this section, you can see the types of events already created in the system. You can use one of them, or create a new type.

To create a new event type, click **New**. Enter the name of the event type in the **Name** field. Leave **Day of the week** and **Time Range** as "Changeable", later you will be able to change these settings in the event itself.



Click the **Add Event** button and select the event type you want to create from the dropdown list.



Most of the types listed here relate to the Helios units. The event types that can be used for Triton R are: **Perimeter**, **Roaming** and **GPRS**.

Set the necessary **Value**. You can leave the **Condition** as "Changeable", later you will be able to change it in the event itself. Select the necessary operand in the **Operand** list, as follows:

And – when you create several events, this event and the following one will be performed simultaneously.

And then – when you create several events, the following event will start only after the first one is performed.

Transmit – the event will be transmitted.

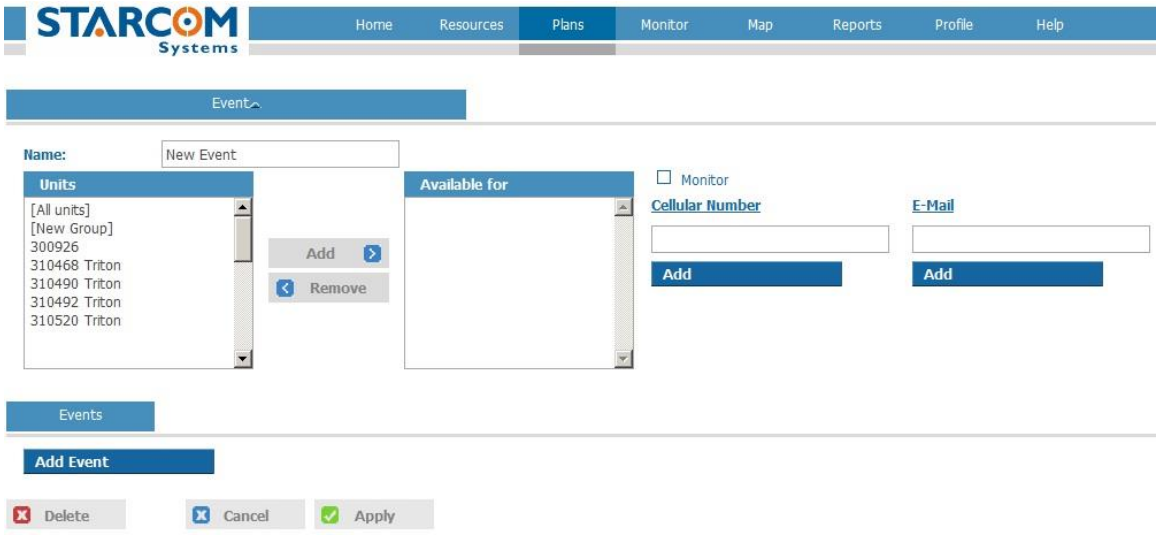
End – ends an event. For example, you can create an output event, which after it performs the necessary actions will simply end.

You can create a complex event type, which consists of several events.

When finished, click **Apply**. The new event type is saved.

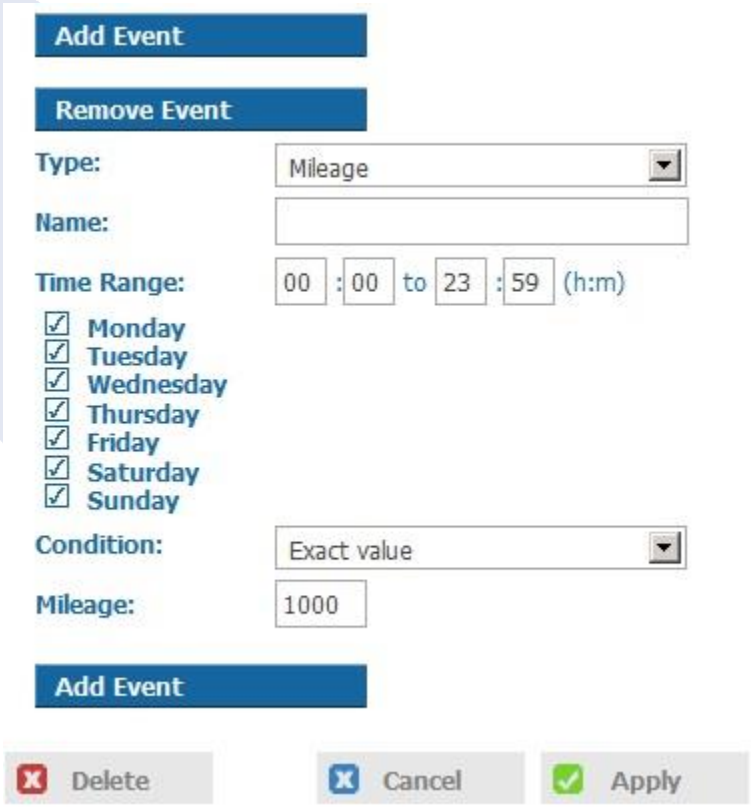
To create a new event, click **New** in the Events section.

Enter the name of the event in the **Name** field. In the **Units** list, select the units you want to include in the event and click **Add**. The units will be moved to the **Available for** list.



Enter the cellular number and email address to receive the event notification. If you select the Monitor checkbox, the event will be displayed on the Monitor page (see below) in real time.

Click the **Add Event** button and select the type of the event you want to create from the dropdown list.



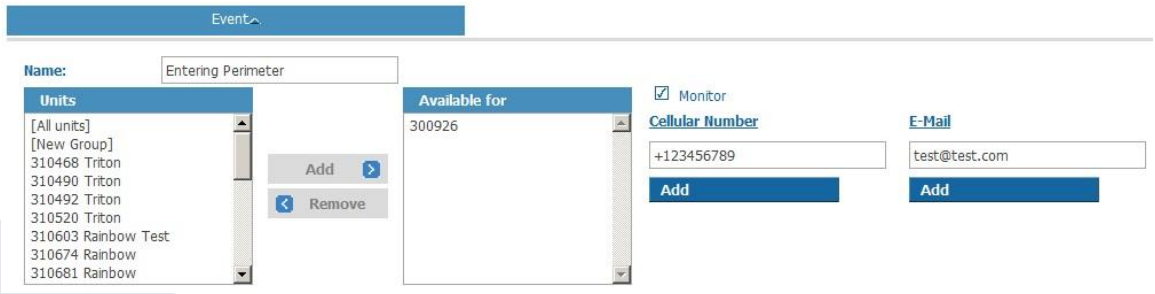
Specify the time and date range and the event condition.

When finished, click **Apply**. The new event is saved.

For example, let's create an event, which will send an alert when the unit enters a specific location.

For this, we will use a Location event type already created in the system and create a new event based on this type.

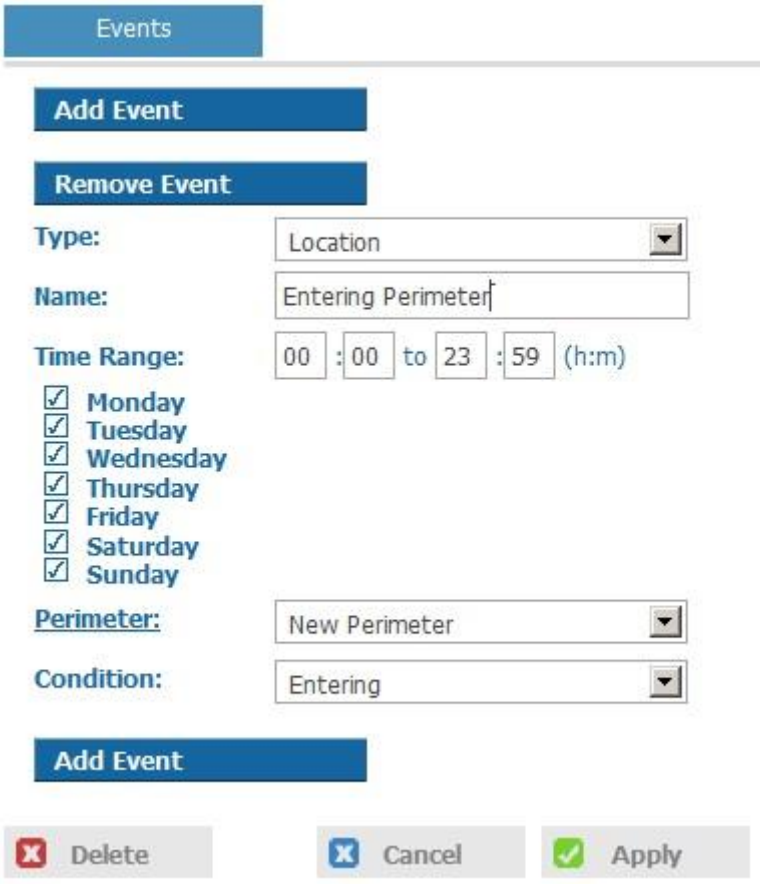
Go to **Events** and click **New**.



Enter the name of the event in the **Name** field. In the **Units** list, select the units you want to include in the event and click **Add**. The units will be moved to the **Available for** list.

Enter the cellular number and email address to receive the event notification. Select the Monitor checkbox, if you want the event will to be displayed on the Monitor page in real time.

Click the **Add Event** button and select the **Location** type in the **Type** list.



Enter the name of the event in the **Name** field. Select the necessary time and date range.

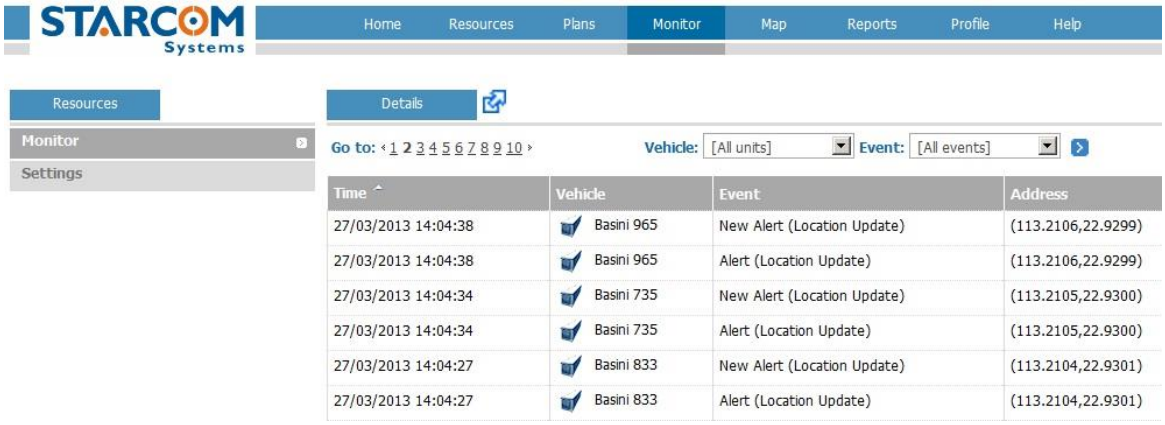
Select the necessary perimeter in the **Perimeter** list.

Select **Entering** in the **Condition** list.

Click **Apply**. The new event, which will send an alert when the unit enters a specific location, is created.

Monitor

The Monitor section allows you to select a set of events for a specific unit type and to see them displayed in real time.

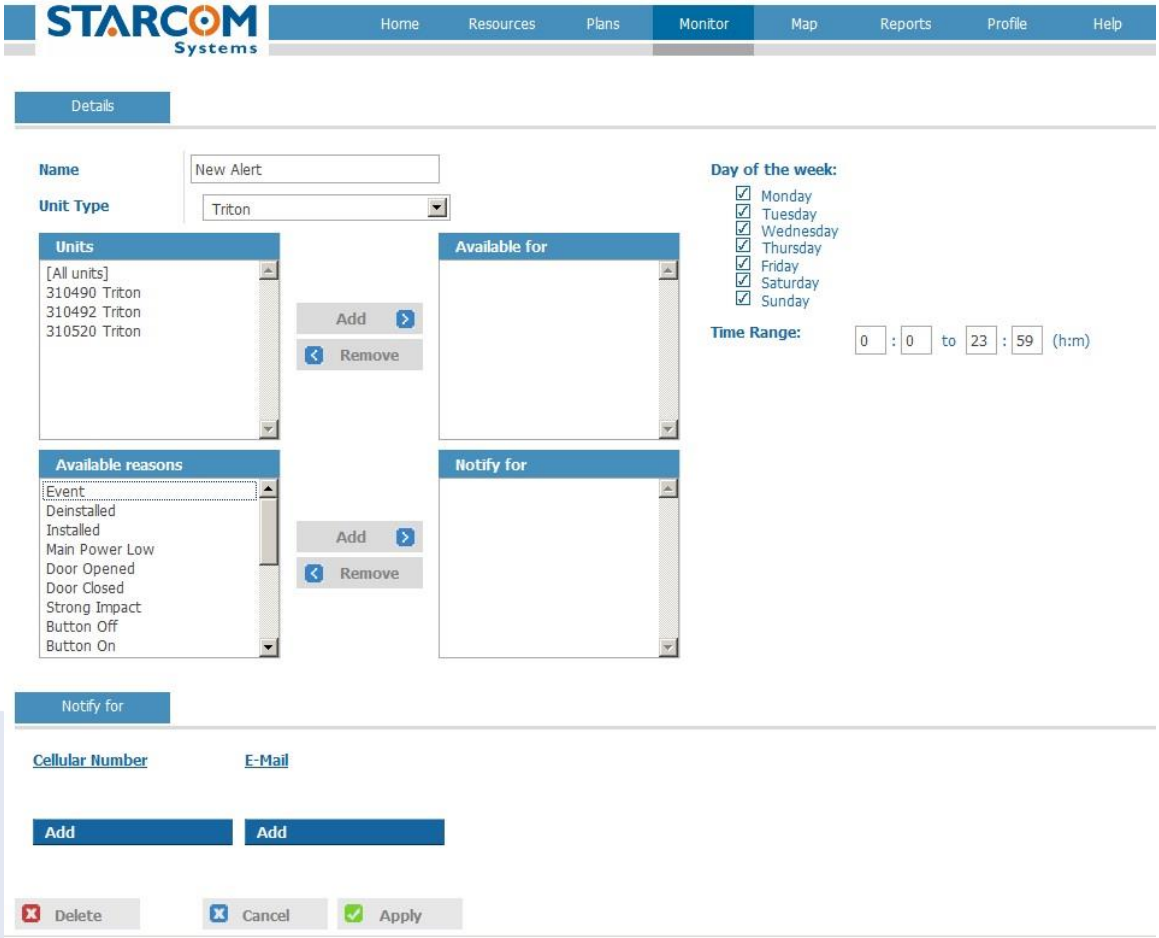


On the left side, the Monitor section features the following tabs:

Monitor – displays the events in real time.

Settings – allows creating new and modifying existing monitoring events.

To create a new event, go to the **Settings** tab and click **New**. The Details page opens. In the **Name** field, enter a name for the new event.



Select **Triton** in the **Unit Type** list.

In the **Units** list, select the units you want to include in the event and click **Add**. The units will be moved to the **Available for** list.

In the **Available reasons** list, select the reasons you wish to receive an alert for and click **Add**. The reasons will be moved to the **Notify for** list.

- Main Power Low – alerts you of the battery getting low.
- Door Opened/Door Closed – alert created when the container door is being opened/closed (Door button is pressed/unpressed).
- Weak Impact/Strong Impact – events which show two types of impact on a container.

- Button Off/Button On – alert that appears when the Operation button of the unit is pressed. This can serve as a simple test to indicate whether the unit is working.

- Location Update – event which will update you on the unit location status.

- Power On – alert that is sent when the unit turns on.

- Light On/Light Off – event which alerts upon a change of light inside the container. The Triton R light sensor readings are indicated by numerical values (when the unit is located in a well-lighted place the light sensor value will be higher than in a dark place). Those values appear on the Map page and in the reports.

- Temperature High/Temperature Low – alert sent when the unit's temperature sensor detects when the temperature gets lower or higher than the defined low and high temperature values.

- No Activity – this event can be used to receive alerts when devices have stopped transmitting. The default value is 336 hours (2 weeks).

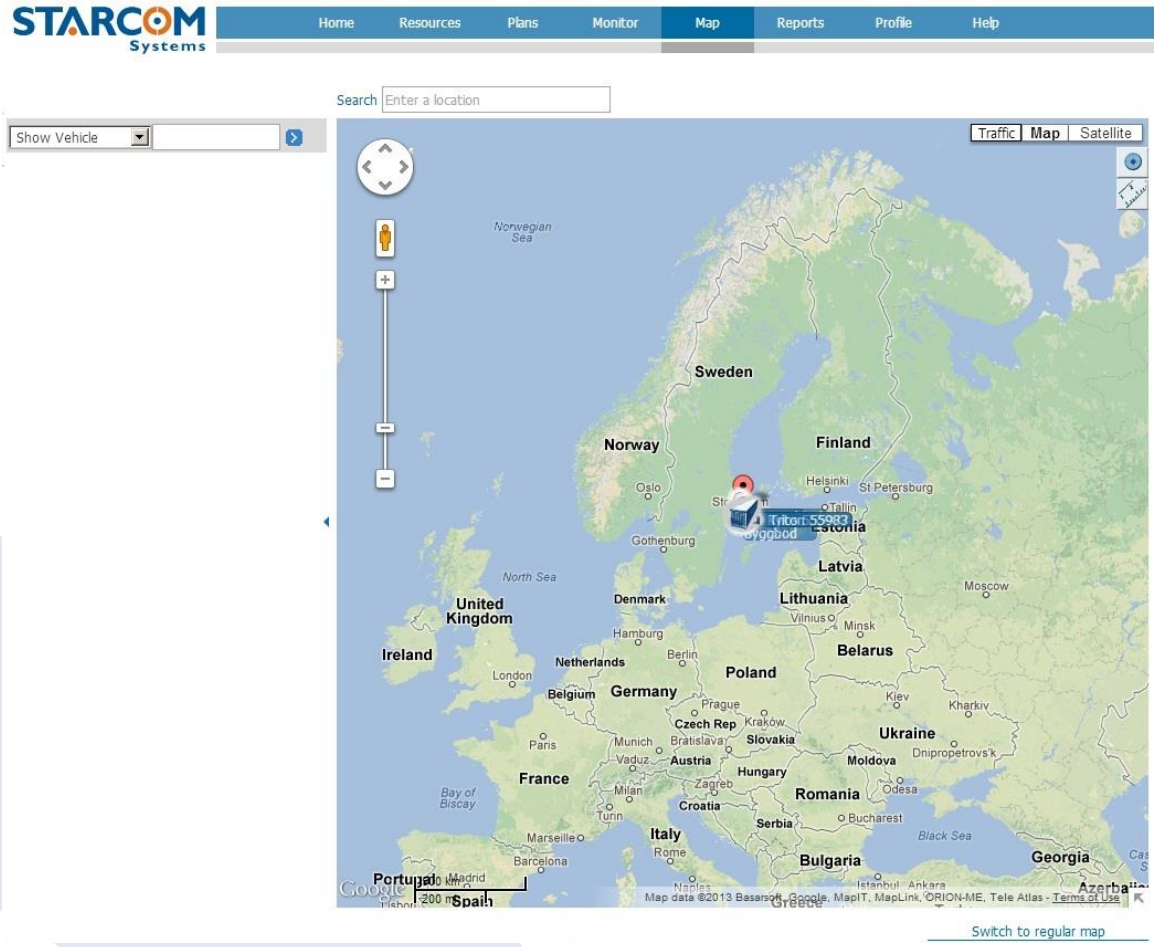
Enter the cellular number and email for the notification to be sent to in the **Notify for** section.

Press **Apply**. The new monitoring event is saved.

Once the events are generated by the units, they will appear on the Monitor page. You will also receive a notification by SMS. The email notifications are accumulated and sent once every half an hour to avoid spamming.

Map

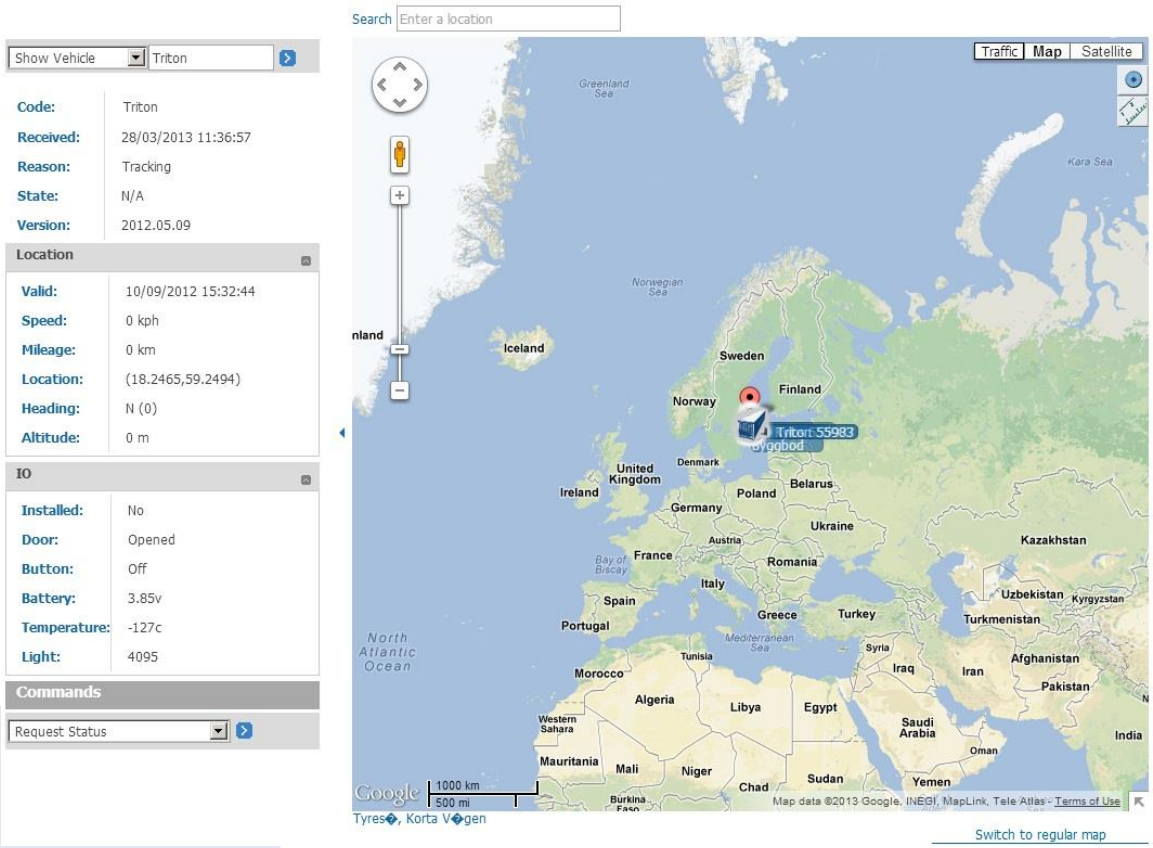
The Map page displays the location of a single unit, or a group of units. It also shows the unit information and commands.



You can select a unit, or a group of units in the dropdown list on the left.

In the Search field, you can enter the unit number to be displayed.

Once you select the unit, its location will be displayed on the map and its information will appear on the left.



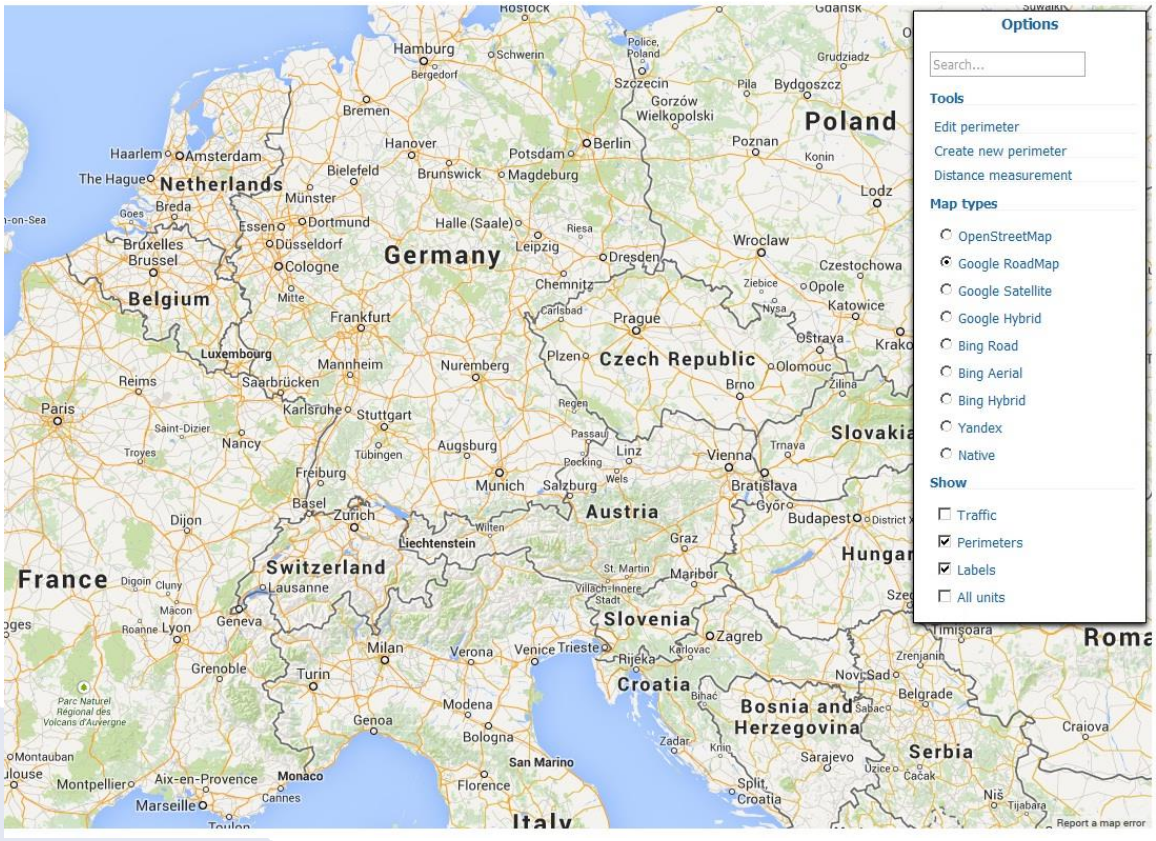
The following unit information is displayed:

- **Code** – the unit name
- **Location** – the address of the last GPS position of the unit
- **Received** – the date and time of last transmission from the unit
- **Reason** – the reason for the transmission
- **State** – the unit logic state (for Helios units)
- **Version** – the unit firmware version

- **Location** – the GPS location of the unit, including:
  - **Valid** – the date and time of the last location transmission from the unit
  - **Speed** – the last recorded speed of the unit
  - **Mileage** – the last recorded mileage of the unit
  - **Location** – the GPS coordinates of the last position of the unit
  - **Heading** – the unit moving direction
  - **Altitude** – the last altitude of the unit

- **IO** – unit input information

- **Commands**
  - **Request Status** – requests the current status of the unit
  - **Tracking** – overrides the unit transmission rate settings and forces the unit to transmit according to the specified interval.
  - **Stop Tracking** – stops the tracking command and returns the unit to its regular transmission rate
  - **Set Mileage** – sets the specified mileage value in the unit



On the right there are Map Options. Clicking on the Options menu will reveal the following options.

- **Search**

As you type the name of a search criterion in the search field, a list of matching names, from which you can select the required name, appears.

- **Tools**
  - **Edit perimeter** – allows you to edit an existing perimeter.
  - **Create new perimeter** – allows to create a new perimeter.
  - **Distance measurement** – allows to measure the distance between two points on the map.

- **Map types**

You can select the following map types: OpenStreetMap, Google RoadMap, Google Satellite, Google Hybrid, Bing Road, Bing Aerial, Bing Hybrid, Yandex, Native.

- **Show**
  - **Traffic** – shows the current traffic conditions (where applicable).
  - **Perimeters** – displays your perimeters on the map.
  - **Labels** – displays the unit name next to the unit icon on the map.
  - **All units** – displays all your units on the map at once.

Reports

The Reports section allows you to generate different unit reports and to schedule automatically generated reports.

On the left side, the Reports section features the following tabs:

Instant – allows to generate reports on demand for a single unit or a group of units for a specific time period (date and time range).

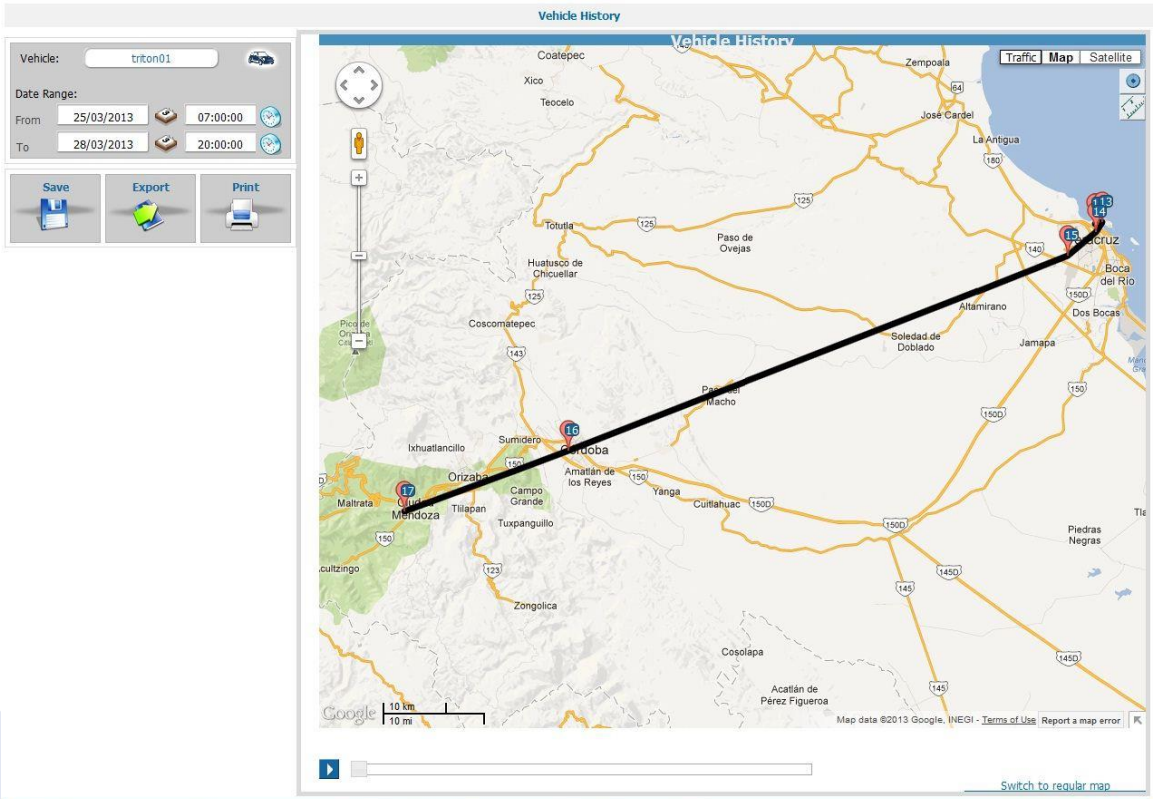
Schedule – allows to define scheduled reports that generate automatically on a daily, monthly or weekly basis.

NOTE: The reports can be generated for the last 30 days only.

You can generate the following types of reports: **Work Hours**, **Work Hours Summary**, **Work Hours Group Summary**, **History**, **History – Technical**, **Violations**, **Live Status**, **Events**, **Perimeter Entry**, **Transmit Reasons**, **Monitored events**, **Stops**.

To generate a report, select the report type in the **Report** dropdown list. Select the unit or group of units in the **Unit** dropdown list. Specify the dates and times in the **Date Range**. Click **Generate**.

The following is an example of a report generated for one unit on one day and for a specific time period.

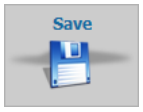


Received	Reason	Installed	Speed (Kph)	Mileage (Km)	Address
25/03/2013 07:39:58	Tracking	On	0	0	(1) Veracruz, Fidel Velazquez (-96.1455,19.2119)
25/03/2013 07:40:30	Ping				Veracruz, Fidel Velazquez (-96.1455,19.2119)
25/03/2013 08:40:00	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1455,19.2119)
25/03/2013 08:40:31	Ping				Veracruz, Fidel Velazquez (-96.1455,19.2119)
25/03/2013 09:40:02	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 09:40:34	Ping				Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 10:40:04	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 10:40:35	Ping				Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 11:40:06	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1456,19.212)
25/03/2013 11:40:37	Ping				Veracruz, Fidel Velazquez (-96.1456,19.212)
25/03/2013 12:40:08	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1456,19.212)
25/03/2013 12:40:39	Ping				Veracruz, Fidel Velazquez (-96.1456,19.212)
25/03/2013 13:40:03	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1456,19.2117)
25/03/2013 13:40:34	Ping				Veracruz, Fidel Velazquez (-96.1456,19.2117)
25/03/2013 14:40:05	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1456,19.2117)
25/03/2013 14:40:36	Ping				Veracruz, Fidel Velazquez (-96.1456,19.2117)
25/03/2013 15:40:11	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 15:40:43	Ping				Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 16:40:13	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1456,19.2118)
25/03/2013 16:40:44	Ping				Veracruz, Fidel Velazquez (-96.1456,19.2118)
25/03/2013 17:40:15	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1456,19.2118)
25/03/2013 17:40:47	Ping				Veracruz, Fidel Velazquez (-96.1456,19.2118)
25/03/2013 18:40:14	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 18:40:45	Ping				Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 19:40:16	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 19:40:53	Ping				Veracruz, Fidel Velazquez (-96.1455,19.2118)
25/03/2013 20:40:18	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1456,19.2119)
25/03/2013 20:40:49	Ping				Veracruz, Fidel Velazquez (-96.1456,19.2119)
25/03/2013 21:40:20	Tracking	On	0	0	Veracruz, Fidel Velazquez (-96.1456,19.2119)

The report includes a map area and tracking details area. The map area shows a map of the area in which the unit is located showing points of movement of the unit. The tracking details area lists the tracking data of the unit.

The pointers on the map correspond with the numbers in the address column of the detailed list of transmissions received from the unit. These numbers indicate the points of movement of the unit. The total number of map pointers available per report is 50.

On the bottom of the Map section there is a Play button that enables you to play back the movement of the unit on the map.

To save the report, click **Save** 

. The report is saved as an *.html or a *.pdf file.

To export a report, click **Export**

. The report is exported as a *.csv file, which can be viewed in Excel, to your default downloads folder.

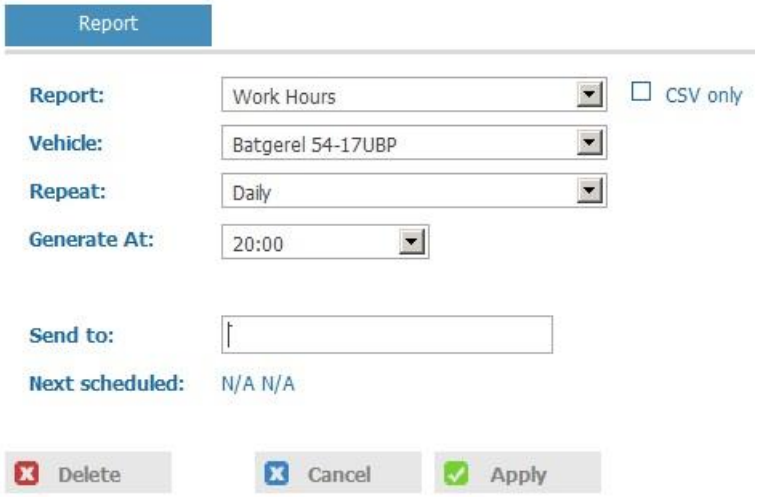
To print a report, click **Print**

. The report appears in your default browser window where you can select the printer to print out the report.

Scheduled reports

To create a scheduled report, in the **Reports** section, click **Schedule**. The Schedule page appears.

Click **New**. The Report Scheduling page opens.



From the **Report** dropdown list, select the type of report you want to create.

Tick the **CSV only** checkbox, if you do not want a map provided with the report.

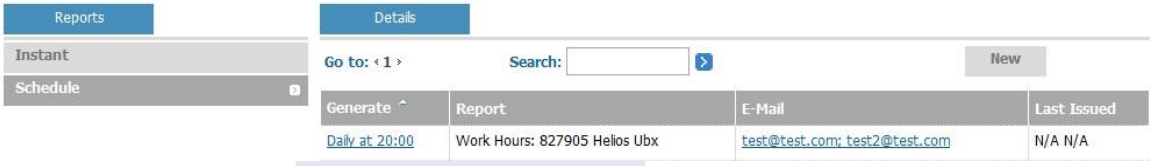
From the **Unit** dropdown list, select the unit or group of units for the report.

From the **Repeat** dropdown list, select if you want the report repeated **Daily**, **Weekly** or **Monthly**.

From the **Generate At** dropdown list, select the time at which you want to generate the report.

The **Send to** field is populated with the default email address for the unit. You can change this address or add additional email addresses, separated by a semicolon.

Click **Apply**. The report schedule is saved and added to the list of scheduled reports.

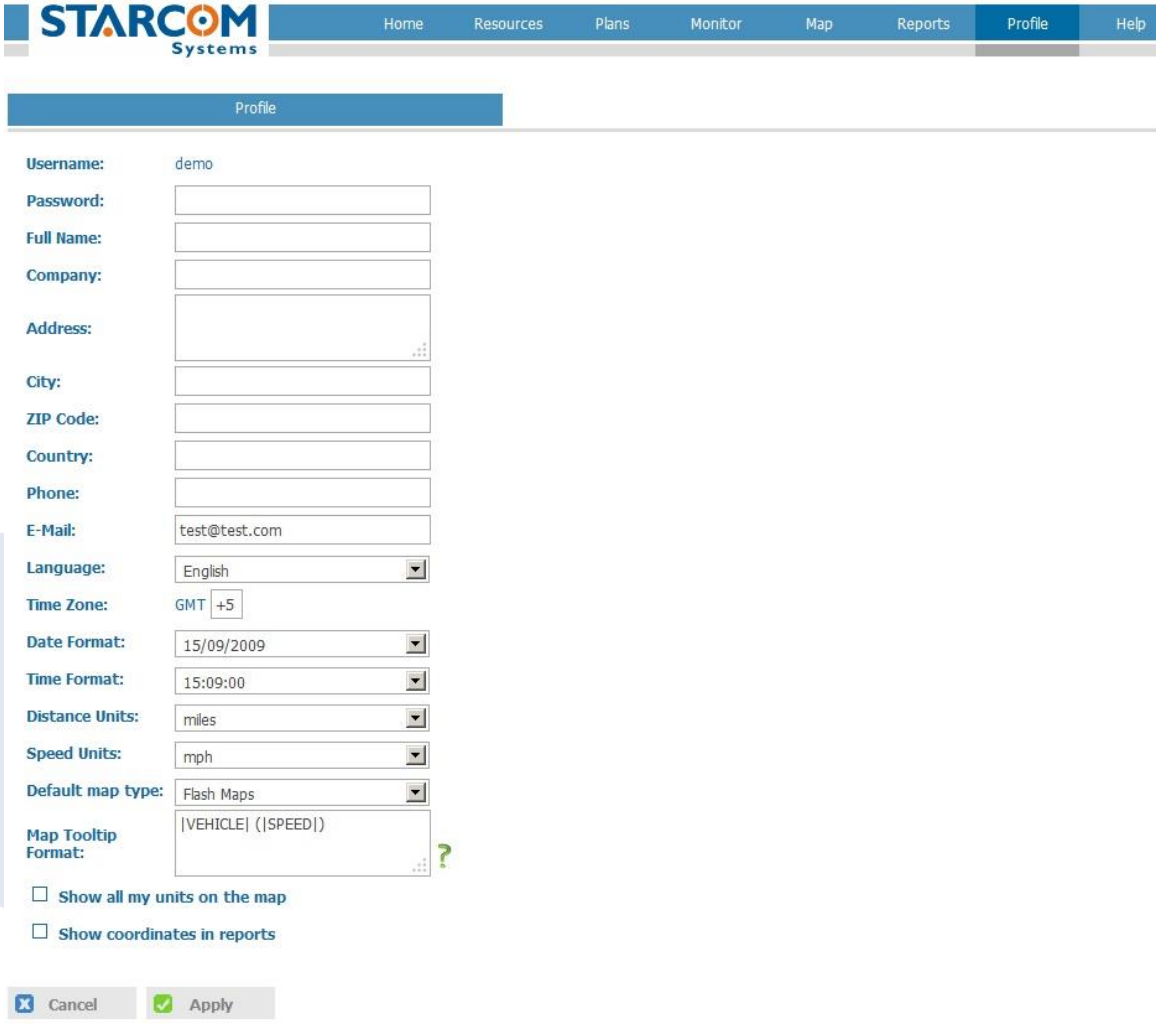


To modify a scheduled report, in **Reports**, click **Schedule**. In the **Details** section, under the Generate column, click the link of the report schedule you want to modify. The Report Scheduling page appears. Modify the report schedule as required. Click **Apply**. The modified schedule details are saved.

To delete a scheduled report, in **Reports**, click **Schedule**. In the **Details** section, under the Generate column, click the link of the report schedule you want to delete. The Report Scheduling page appears. Click **Delete**. The scheduled report is deleted.

Profile

The Profile section shows your profile details that were created when you purchased your units. You can view and modify these details as required.



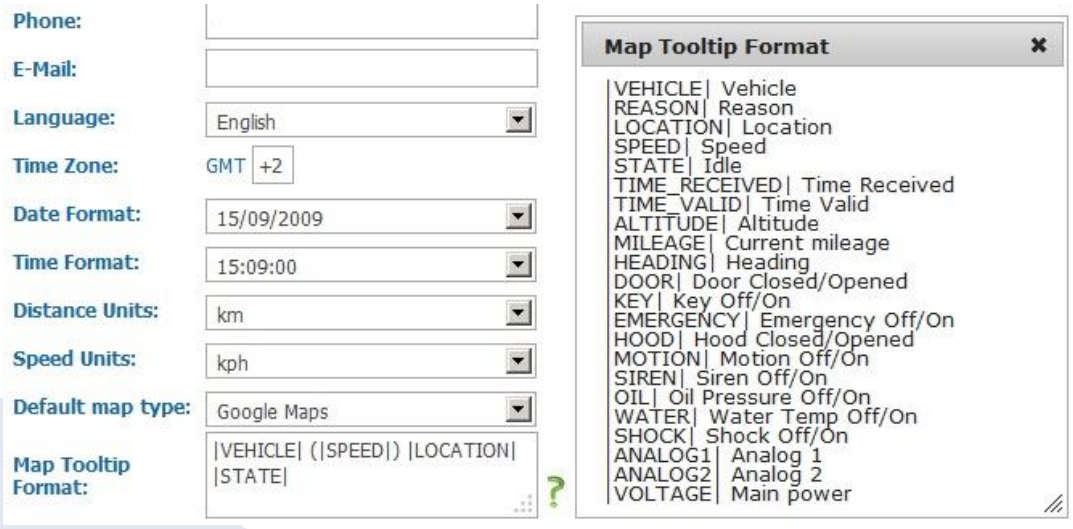
To view or modify your profile, click the **Profile** tab, and modify the information as required.

Click **Apply**. The changes are saved.

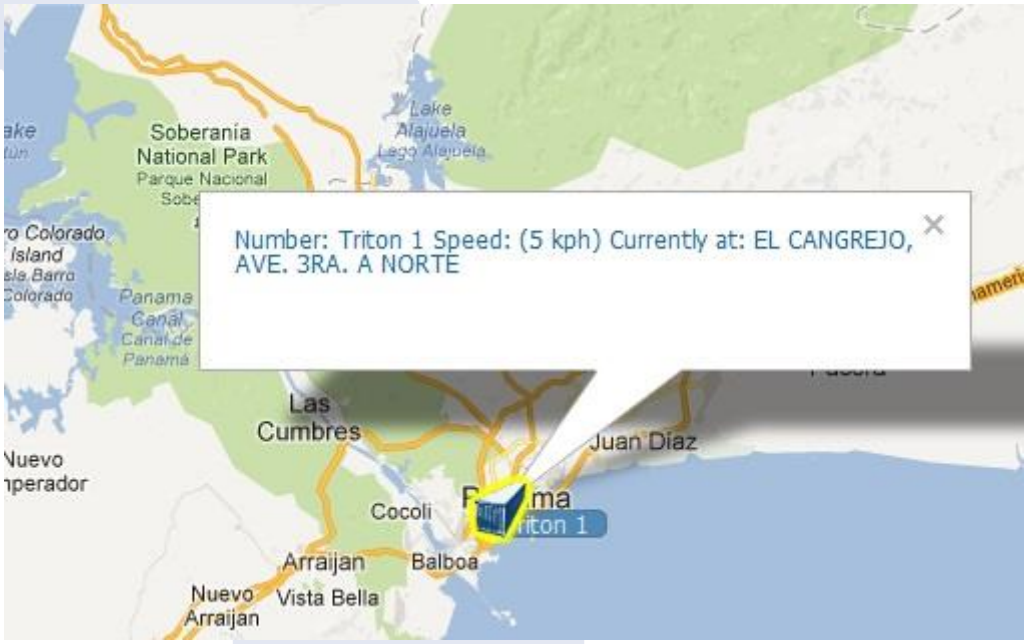
Using Map Tooltip Format

The Map Tooltip Format field lets you configure the information that will appear in the info window on the Map page when you select a unit.

To see all the parameters that can be configured in the Map Tooltip Format field, click on the green question mark located to the right of the field. The Map Tooltip Format legend window will appear.

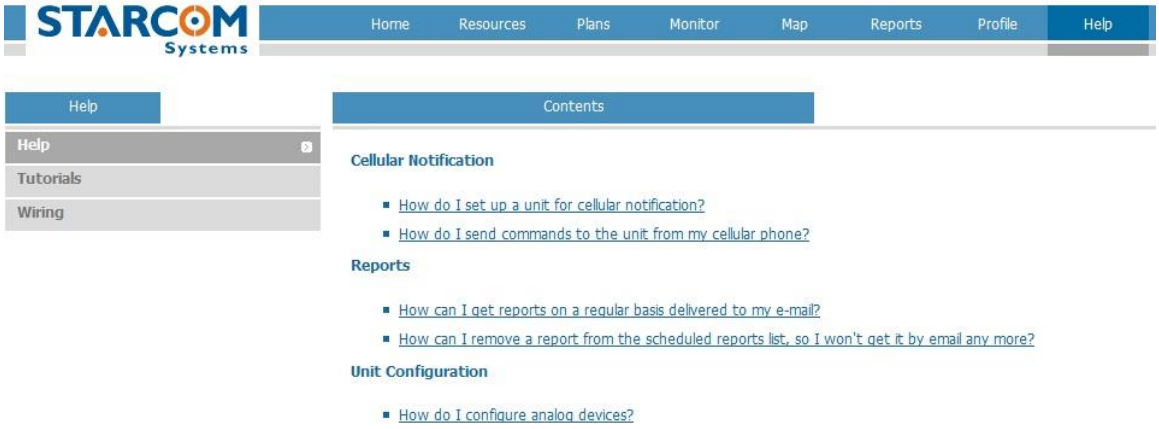


Once you made all the necessary changes, click **Apply**. Then go to the Map page and check the unit info window.



Help

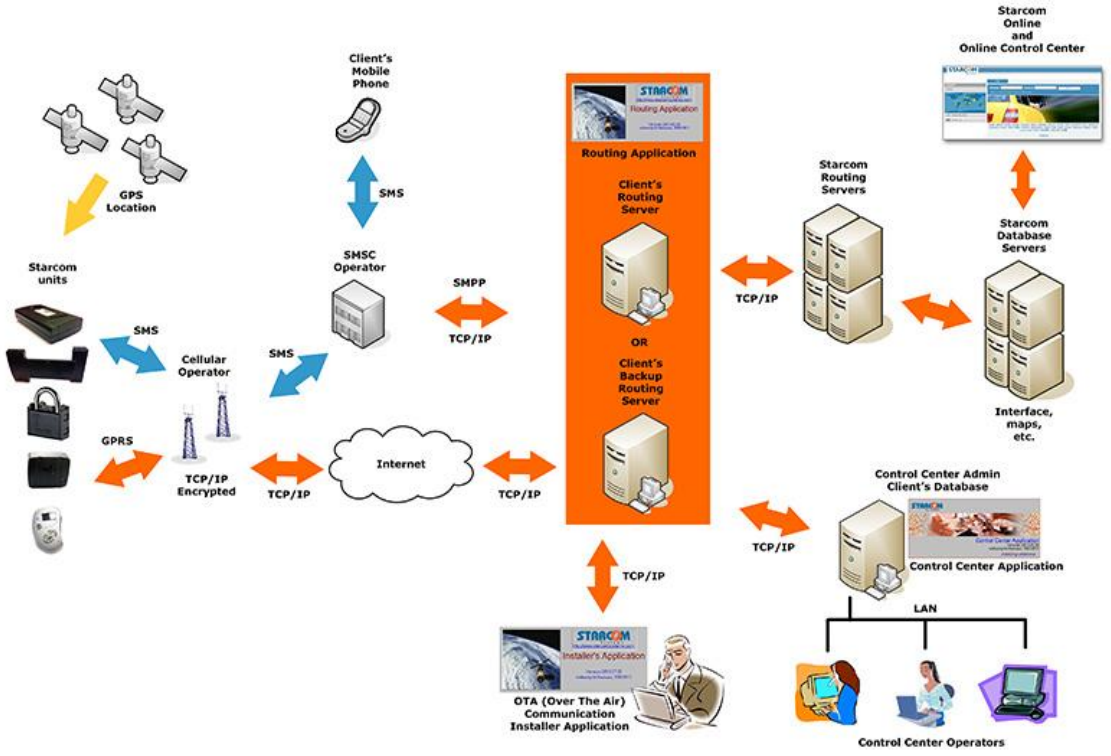
The Help section contains answers to some frequently asked questions and Starcom Online tutorials.



Click on the appropriate tab to access the necessary information.

Appendix A – Unit Communication in Starcom Systems

Triton R is the mobile component of Starcom's advanced tracking and monitoring system. The system uses advanced software algorithms for field tracking of units and provides customers with a selection of real-time information about the tracked device. The following image illustrates the Starcom Systems communication channels.

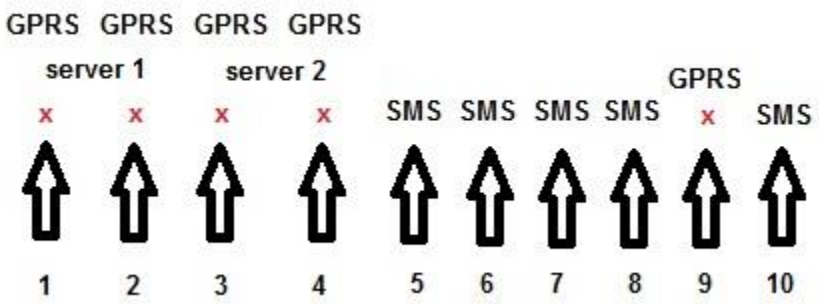


The unit transmits messages according to the values specified in Triton Parameters > Transmission Rates settings (GPRS, SMS).

When the unit's modem is turned on, it tries to connect to the network and transmit via GPRS (4 attempts: 2 on the first server and 2 on the second server). If it fails to connect to the network, it will switch to the SMS channel (if it is configured to transmit via SMS) after about 4 minutes, because it

makes four attempts to connect via GPRS. It will constantly try to transmit via SMS.

The next attempt to transmit via GPRS will be repeated in 5 minutes. Every 5 minutes, the unit will attempt to connect to the network and transmit via GPRS. This process is illustrated in the following figure.



The unit saves all the information that could not be sent in its memory. Once it is able to connect to the network again, it will transmit all the stored data.

The device sends encrypted data to the routing server. When the routing receives it, it is decoded and encoded at the same time and sent to all the recipients configured in the system.

The message size is 140 bytes (70 bytes data and 70 bytes header).

For more information, see *Routing*, *Control Center* and *SMS Notifications* guides.

Appendix B – Contacts

For more information about Starcom Systems Company and products, please visit: http://www.starcomsystems.com.

Support

Comprehensive support information is available online at: http://wiki.starcomsystems.com/wiki/index.php/Support.

Should you have any questions regarding our system, please contact Starcom technical support. For personalized support, use **Email**: support@starcomsystems.com, or **Skype**: **starcom.support**.